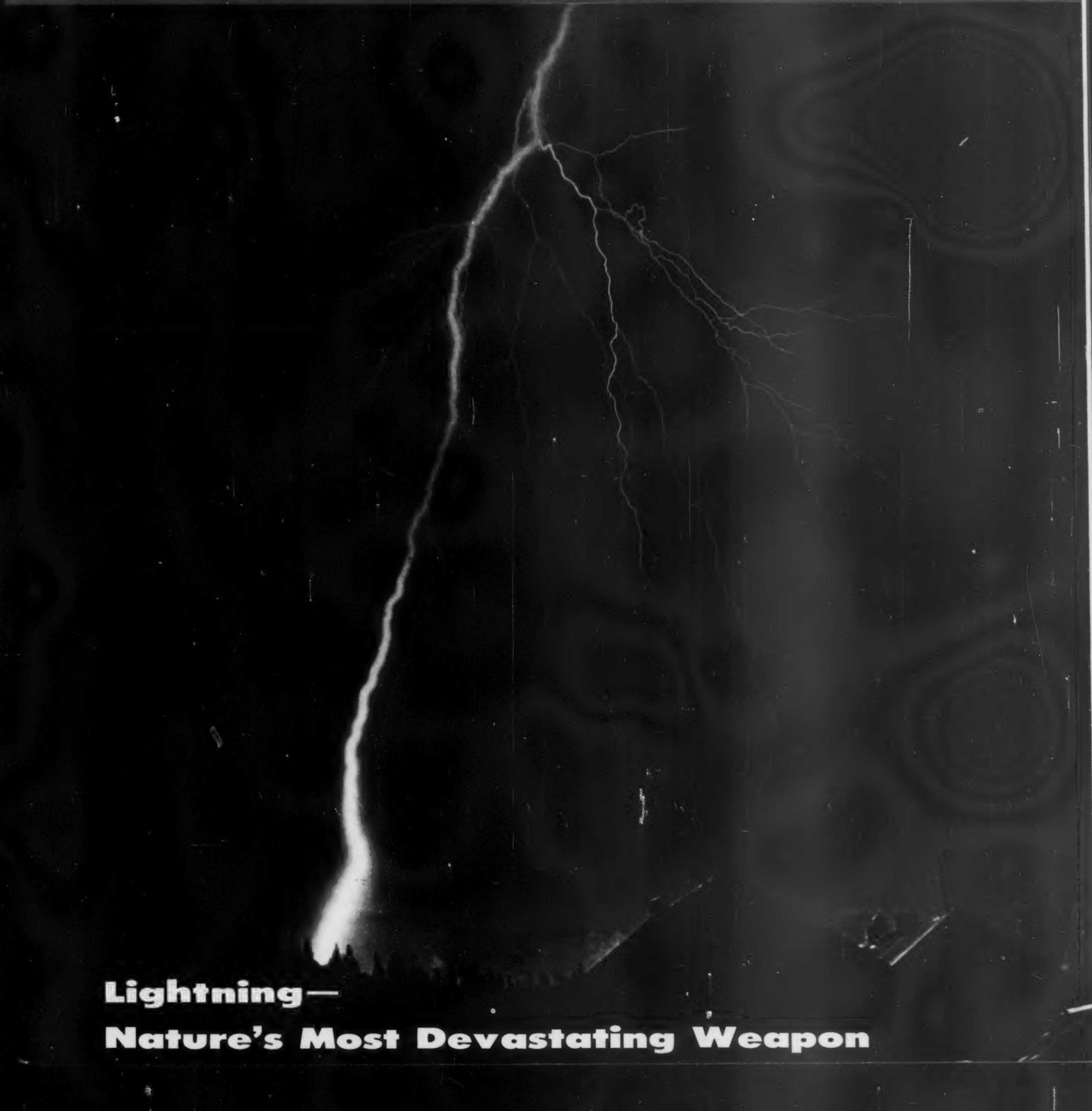
A UNITED STATES
DEPARTMENT OF
COMMERCE
PUBLICATION

Incorporating *International Commerce*

JUNE 14, 1971

Commerce Today

Coming Developments in Business and Technology



Lightning—
Nature's Most Devastating Weapon

Building A Better Nation For The Future

What may prove to be one of the most farsighted developments of modern times was dedicated recently when President Nixon officially inaugurated the vast new Arkansas River Navigation System.

The project opens the Tulsa suburb of Catoosa to maritime traffic on the Arkansas River, making perhaps the most significant inland waterway achievement since President Eisenhower opened the St. Lawrence Seaway in 1959.

The McClellan-Kerr Project, as the new waterway is known, can be compared in spirit, President Nixon said, to the Louisiana Purchase, the development of the Transcontinental Railroad, the opening of Oklahoma, the great achievements of the Tennessee Valley, and the landing of men on the moon.

Developments

The waterway gains these historic comparisons because it will do so much to assure future expansion.

- It will open a whole new section of the heartland of America to the development of new industries and the cities that must go with them.
- It will result in an estimated $800 million and conservation development, and more than 20,000 new jobs in the next five years alone.
- It will bring about unprecedented recreation and conservation developments, and will provide a new network of power and flood control projects in areas that once were subject to repeated devastation by floods.

All of this should make this area an attractive one for American business and industry in considering future expansion.

Throughout history men have tended to build some of their greatest cities where they have access to water transportation, along the coasts and the great rivers of the world.

Today man has the capacity to bring water and its transportation to areas where it has never been available before, bringing with it unprecedented economic promise for sections of inland America.

Coming at a time when much of the effort of government may seem to be committed to solving problems and preventing them, this kind of historic development proves that the productive work of building a better nation for the future—with great beneficial impact on our country and our economy—is going forward.

Such efforts never end. Almost without notice or credit over the past 15 years, for example, the nation has been driving on a web of new interstate highways initiated by President Eisenhower nearly 20 years ago.

Today new developments of this magnitude for the future are in the planning stages in many of the departments of government and in the Congress.

To those who say America has stopped growing or stopped developing or has lost its incentive to improve itself, these monumental achievements are evidence to the contrary.

As President Nixon said in dedicating the Arkansas River waterway, the nation has "demonstrated once again the vitality of the American tradition of daring great things and achieving what we dare."

Maurice H. Stans

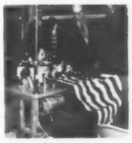
Commerce Today

Incorporating *International Commerce*

Vol. I, No. 18, June 14, 1971

4 NOAA Scientists Seek Answers To Lightning's Mysteries
Series of experiments may uncover causes of nature's most devastating weapon, devise protection for man.

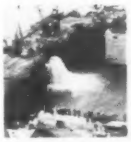
7 Minority Firms Learning How To Sell To Federal Government
New unit seeks out the largest and the smallest suppliers, matches their products with Government needs.



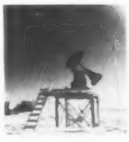
11 Underground Communications For Miners Being Studied
Interagency unit seeks to develop new equipment for use in combatting dangers caused by mining disasters.

15 Secretary Finds Trade Promise In Madrid Talks
U.S. investors encouraged to step up activities as Spaniards offer incentives; tourism gains expected.

19 Domestic Business Report
New Center will emphasize maritime safety—Paper industry's exports passed $1 billion mark in 1970—Hemisphere's top super tanker basin opens in U.S.—Population density of U.S. now at 57 people per square mile—City government payrolls rise—Glass container shipments rebounding.



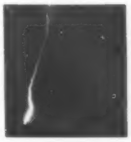
25 Science and Technology
NTIS to be central distribution point for all Federal environmental statements—NOAA experimental facility will try to upgrade short-range weather forecasts—Panel calls for regulations on auto fuel additives—New seeding techniques may moderate Great Lakes snowstorms—Private salmon raising venture gets NOAA assist—Patents of special interest.



31 International Commerce
Mainland China trade techniques detailed—May's official trade actions summarized—New committee will advise Sec. Stans on world trade—Oil find could spur already strong Congo economy—U.S. traders face growing Japanese competition in Korean market—Honduras faces economic problems.

2 Economic Highlights

63 New Publications



COVER: *Nature's most unpredictable weapon and one of man's most dangerous and expensive nemeses, lightning is the subject of a special research effort by scientists of the National Oceanic and Atmospheric Administration. (See story, Page 4.)*

U.S. DEPARTMENT
OF COMMERCE

MAURICE H. STANS
Secretary

JAMES T. LYNN
Under Secretary

B. R. LITTIN
Director of Public Affairs

DICK EVANS
Editor

CLARENCE M. ZENS
Associate Editor, International Commerce

RICHARD BALENTINE
Associate Editor, Science and Technology

ARTHUR McDERMOTT
Associate Editor, Domestic Business

AMERICO A. W. FAVALE
Coordinator of Graphics

Published biweekly by the U.S. Department of Commerce, Washington, D.C.

Annual subscription rate $20 ($5 additional for foreign mailing, $14.30 additional for domestic air mailing). Single copy 75 cents. Make checks or money orders payable to Superintendent of Documents and mail to Superintendent, U.S. Government Printing Office, Washington, D.C. 20402, or to any U.S. Department of Commerce Field Office.

All subscription inquiries and address changes should be sent to the Superintendent of Documents, at the above address. This is the central distribution agency for U.S. Government publications.
Microfiche copy available at 95¢ per issue from National Technical Information Service, Springfield, Virginia, 22151.

Contents of this publication are not copyrighted unless indicated, and if not so indicated, the articles may be reproduced in part or in full without any prior consent.

Use of funds for printing this publication approved by the Director of the Bureau of the Budget November 26, 1969.

Business Capital Outlays Continue To Rise; Utilities, Communications Show Sharp Gains

Economic Highlights is prepared by Dr. Harold C. Passer, Assistant Secretary for Economic Affairs, and is based on the latest economic indicators (see charts on adjoining page).

Business spending on new plant and equipment is expected to reach a record annual rate of more than $82 billion in the current quarter, a level substantially higher than in the previous two quarters.

Business investment dropped in the fourth quarter of 1970—in part because of the automobile strike—and then recovered slightly in the first quarter of 1971. The May survey of spending plans conducted by the Commerce Department's Office of Business Economics indicates a $3 billion rise in the current quarter. This raises investment outlays above the previous peak in the third quarter of 1970.

For 1971 as a whole, businessmen project outlays of $81.8 billion, up about 3 percent over 1970. This is slightly below the gain expected in February but still above the 1.4 percent gain anticipated in December.

The expected gain for 1971 is approximately that envisioned by the Nixon Administration in formulating its economic forecast for the year. Since the investment boom of the 1960s continued during the 1970 economic slowdown, both Government and private economists had assumed that capital spending would not advance as rapidly as other major sectors of the economy.

Some industries, however, plan large increases in investment in 1971. The nonmanufacturing sector will increase plant and equipment outlays by 7 percent, including advances of 16.5 and 8.4 percent, respectively, in public utilities and the communications and commercial category. Aside from manufacturing, the only weak component is the airlines, which plan to cut capital spending by 40 percent this year. Manufacturing industries, still operating at a relatively low level of capacity utilization, anticipate a decline of 4 percent in expenditures, although a slight upward tendency is discernible in the 1971 quarterly pattern.

The prospect of a moderate gain in total outlays is confirmed by the irregularly rising trend of new factory orders for capital equipment in recent months. The uptrend is more pronounced when the erratic shipbuilding and railroad equipment components are removed from the series.

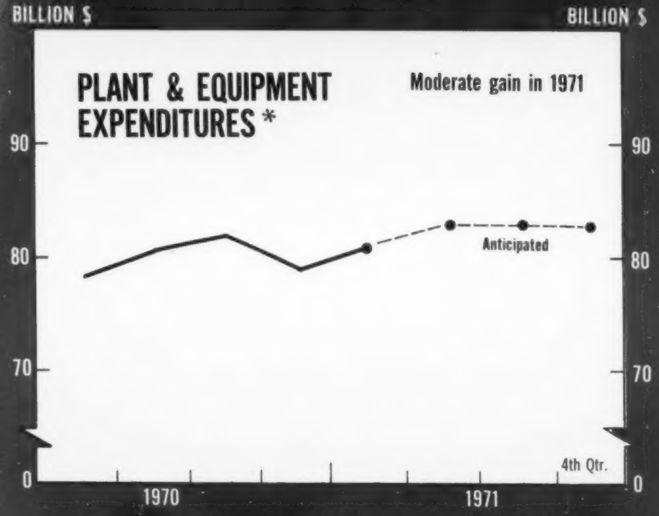
Businessmen may revise upward their plant and equipment spending plans for 1971 after they take into account the full impact of several recent developments: the announced depreciation changes that will permit more advantageous tax treatment of fixed business investment, the increase in demand as the economy expands, and the recovery in corporate profits. Rising demand will create a greater need for new and more efficient facilities, and increased profits and the depreciation liberalization will help provide the funds to finance them.

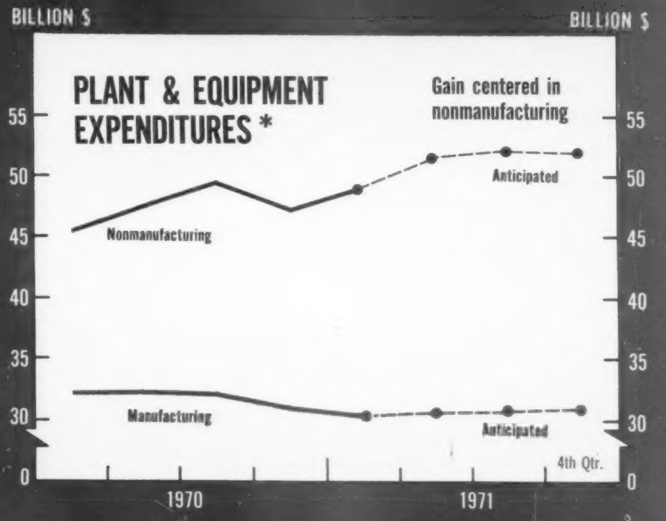
Other economic developments

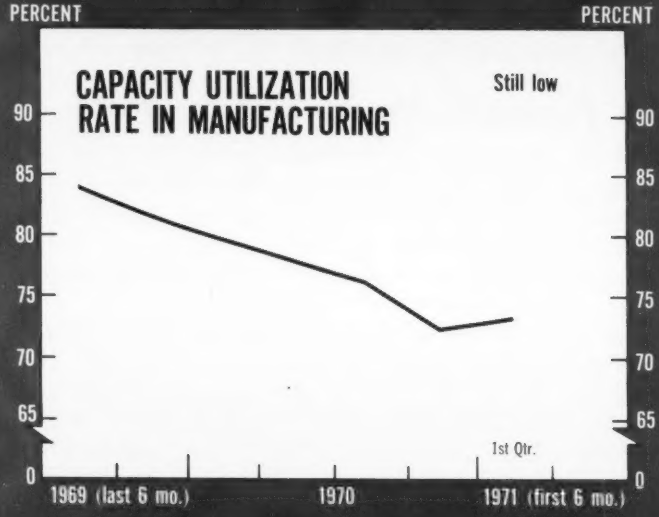
The Census Bureau's composite index of leading economic indicators advanced in May for the sixth consecutive month, providing additional evidence that a solid and sustainable expansion is under way.

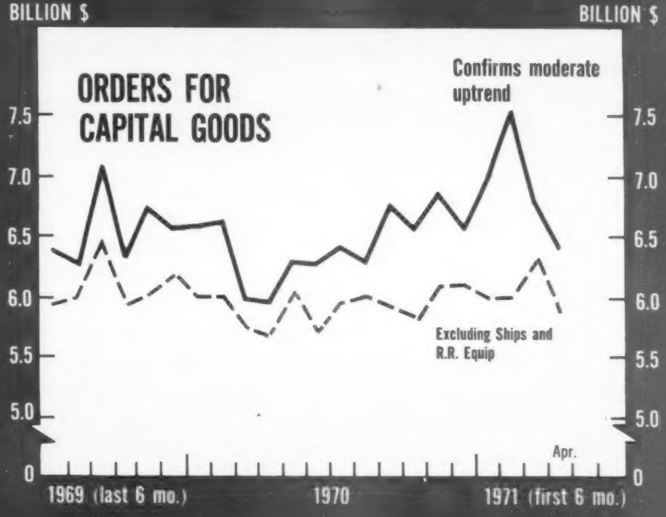
In April, the nation's trade balance showed the largest deficit ever recorded—except for distortions caused by strikes—as imports hit a new high and exports dropped 7 percent from the previous month.

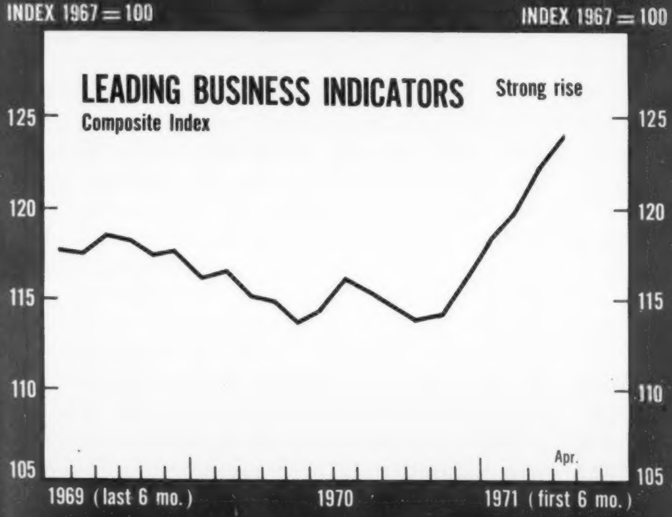
Latest Indicators

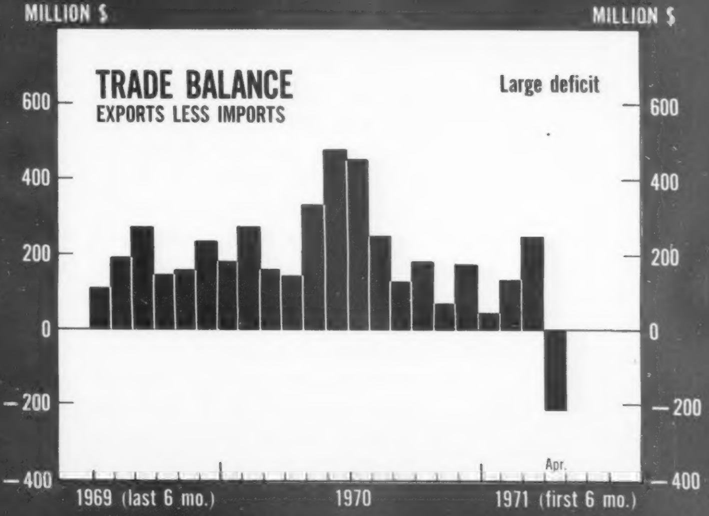












* Annual rates
All data seasonally adjusted.

Commerce Today
June 14, 1971
Vol. I, No. 18

Scientists Probing Bolt From The Blue

Seek To Uncover Lightning's Causes, Define Dangerous Storms To Protect Man, Property

Lightning — nature's most devastating weapon—strikes the earth 100 times a second and causes, in an average year, more deaths and property damage than tornadoes and hurricanes.

This phenomenon creates many serious side effects. Twice during the Apollo 12 moon shot, the launch vehicle was struck by lightning, causing a momentary disruption of much of its electronic instruments. The first bolt hit some 30 seconds after liftoff, and the next, a few seconds later.

Apollo 12 was undamaged, but its encounter with lightning illustrated the problems of predicting lightning and its hazards.

To uncover lightning's causes, define dangerous storms, warn against impending strikes and ultimately to suppress it and protect man and his property, scientists of the National Oceanic and Atmospheric Administration are conducting experiments.

When Apollo 15 lifts off on July 15, NOAA scientists will be monitoring the rocket's exhaust plume, as well as measuring the altitude, base and temperature of the surrounding clouds.

"Launching a rocket or flying a plane through thunder or rain clouds can be hazardous, not so much because the vehicle will be hit accidentally by natural lightning, but because the conductive body of the vehicle may trigger lightning in the high electrical field of the storm," says Dr. Heinz W. Kasemir of NOAA's Atmospheric and Chemistry Laboratory (APCL), Boulder, Colo.

Kasemir is part of a team of NOAA scientists working under contracts from the National Aeronautics and Space Administration. The ultimate goal—a lightning warning and protection system for spacecraft launches and the development of techniques to suppress lightning.

Some 1,800 thunderstorms are in progress simultaneously around the world to keep the atmosphere's global electric current adequately supplied.

Cautions Kasemir, who has been involved in atmospheric lightning studies for more than three decades, "much basic research on atmospheric electricity needs to be done before lightning hazards can be adequately evaluated or protected against."

Two major unknowns face scientists: the electric charge build-up on a rocket as it passes through the atmosphere trailing a massive tail of hot, burning and electrically-conducting gases, and the characteristics of this tail; plus the electric field of each cloud.

Lightning, an electrical discharge between two oppositely charged regions of a cloud, usually requires an electrically-charged field

FIRING AT THUNDERHEADS — *A ball-tipped rocket is loaded into a launcher during lightning experiments at Socorro, New Mexico. The rockets ignited lightning on nine separate occasions.*

of about 500,000 volts per meter to discharge naturally. However, calculations indicate that a field as low as 30,000 volts per meter may be capable of producing lightning if a rocket penetrates a cloud. If these calculations are correct, any nonthundering rainshower must be considered a possible launch hazard.

Studies in progress toward the better understanding of lightning in addition to studying space shots, include experiments which trigger lightning with small rockets.

Rocket-borne steel balls, fired into thunder clouds from a 10,700-foot mountain top in the Magdelena Peaks west of Socorro, N. M., ignited lightning nine separate times.

A NOAA instrumented NASA Beechcraft first located the electrical charge centers of the New Mexico storms as the aircraft flew under the clouds. When the electrical field became large enough, the rockets were fired; the plane then returned to monitor electric field changes in the clouds where the rockets had penetrated.

Meteorologist William E. Cobb, aboard the plane, said, "we nearly always found reduced electrical fields in the clouds after the rocket had ignited a lightning strike."

Fifteen rockets were fired into storms at Socorro, an area selected because thunderstorms usually form over the Magdelena Peaks in the afternoon. Nine rockets were successful in triggering lightning; three were launched toward areas of the storm where researchers thought the electrical field too low to produce lightning.

Three of the rockets were fired on the same path into a storm within 16 minutes. The first rocket triggered lightning strikes, the second and third did not.

This leads to the conclusion, Kasemir noted, that the part of the cloud where lightning was triggered remained discharged for at least 16 minutes. "These mountain top studies were part of our efforts to make rocket launches safer," explained Kasemir. "We undertook the New Mexico tests to see if lightning could be triggered by small rockets as a possible means of preventing lightning discharges during major rocket launches."

After the New Mexican tests, the NOAA/NASA scientists moved to Cape Kennedy for Project Mighty Mouse, a series of test launches with Mighty Mouse rockets. These rockets can reach an altitude of 16,000 feet during their 70-second flight and range in size from 54 to 63 inches.

This autumn, new experiments will be carried out at Socorro and Cape Kennedy. According to Kasemir, a series of tests will be conducted at each location for a period of two weeks. Better instrumentation and better rockets will be employed, as well as drop bombs which will be released from planes flying over the storms and trailing wires to ignite lightning strikes. The instrumentation for these tests is being prepared now.

Further research in assessing lightning's effects on rockets will be conducted during Apollo 15's launch, as it has on both Apollo 13 and 14.

During Apollo 13, NOAA scientists measured the electric fields inside existing clouds along the rocket's flight path, and also measured the electric field on the rocket itself.

During Apollo 14's liftoff on Jan. 31, the Saturn launch vehicle was met at 12,000 feet, from a four-mile distance, by a NOAA research aircraft which studied the hot exhaust tail of the rocket as it accelerated through the lower atmosphere.

The project's leader, Dr. Peter M. Kuhn of NOAA's APCL stated, "As the temperature rises, more and more of the exhaust gas may become electrically charged or ionized. Streams of ionized gas can be ideal conducting paths along which electricity can discharge. Thus, we need to know how large these conducting paths are and where they form around the Saturn.

"These Apollo 14 airborne studies are another step toward providing remote monitoring and warning of atmospheric activity that may be conductive to lightning bolts such as the two that struck the Apollo 12 liftoff," Kuhn explained. His group is working under study contract to NASA's Kennedy Space Center.

For Apollo 15, Kuhn will be stationed in a 36-story vertical assembly building two miles from the launch site. He will conduct thermoradiation measurements on the rocket's exhaust plume from the time the vehicle lifts off until it disappears from view, and, through infrared radiation, he will measure pre-launch atmospheric conditions which could be hazardous to the launch.

The measurements of the thermal structure of the exhaust plume will be given to Dr. Kasemir who will assess possible lightning activities.

Other current plans for the launch include an airborne DC-6 which will monitor the thermal plume as well as collect data on clouds in the area. From two sites at Cape Kennedy, information on cloud altitudes, bases and temperatures will be monitored.

The NOAA Research Flight Facility will also provide meteorological support observations in the air for the launch.

CHECKING THE RESULTS—*After the rocket firings, a NOAA-equipped airplane returned to monitor electric field charges where the rockets had passed.*

The suspected triggering effect of rockets in thunderheads was documented as far as aircraft are concerned, when a NOAA DC-6 research plane was struck by lightning on three separate occasions under similar meteorological conditions during a thunderstorm research project near Flagstaff, Ariz.

Each time lightning struck, the plane was in a dissipating thunderhead where temperatures were near the freezing level, and in an area of the cloud that contained both ice and water. Observations of the electrical field within the storm before and after the lightning strikes suggest that the aircraft itself, moving through the thunderhead, may have triggered the lightning.

The electric field inside a cloud is the determining factor for generating both natural lightning discharges and artificially triggered bolts. If known, the electric field inside a cloud could serve as the basis for a lightning warning system, but presently, the only way to determine this is by flying into and measuring the electric field.

Scientists hope that through their research a more workable method for measuring electrical fields within a cloud will be developed, helping to prevent lightning strikes not only to spacecraft and airplanes, but which can prevent the damage done annually by unpredictable and dangerous lightning. *—NOAA*

Minority Firms Learn 'Where The Action Is' In Federal Procurement

New Unit Seeks Out Suppliers, Matches Their Products With Government Needs

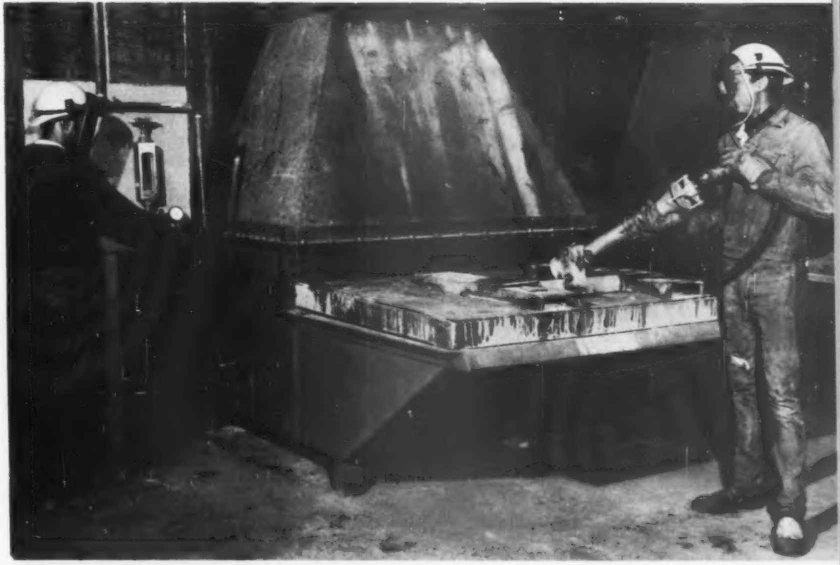
Even the Nation's smallest minority businessmen are being touched by a new bureaucratic vehicle which uses the simplest technique—communications—to pump lifeblood into the weakest and strongest of minority enterprises.

Communication gap

Although the government buys tons of paper products a year and has acres and acres of lawn to be mowed and shrubs to be trimmed, it just discovered two small minority-owned firms which provide these products and services in Washington, D.C.

Operators of the firms didn't know how to get in touch with the people who buy for the government. Federal procurement officers were unaware of the existence of these tiny, faceless firms which typify the plight of the nation's smallest minority businessmen.

This communications gap was bridged by the Washington Minority Business Opportunity Committee, a new link in the chain of



FIRST IN CHEMICALS—*Private sector and interagency support helped launch the Nation's first black-owned major chemical company—Ascension Chemical Corp. in Tonawanda, N.Y. Workers are shown mixing chlorine gas with molten aluminum in this tank.*

NAIL PRODUCTION—*Ray Hammond threads aluminum wire into a nail machine at Wylie Centre Industries Inc., a minority enterprise in Pittsburgh. Moving a coil of wire into the background are Tim Montgomery, left, and Arnie Gregory. This is another example of MBOC minority business assistance.*

IN CLEVELAND, OHIO—*Interagency representatives and local business leaders tour Hough Manufacturing Corp., a small screw products shop.*

Federal concentration on minority business problems.

Matching needs of the buyer, the government, with products of the seller, minority enterprises—large and small—is only the beginning of MBOC's story.

And, the Washington MBOC is only one of 20 similar organizations established throughout the country to carry President Nixon's Minority Business Enterprise program to the grass roots. Committees in other cities are compiling lists of procurement offers, delving into local problems and evaluating the entire minority enterprise effort.

Regular information forum

At least 16 Federal agencies operate some 80 programs affecting minority enterprise, and MBOC, which meets monthly, provides a regular forum for the exchange of information.

MBOC panel membership differs in each city. Primarily an interagency group, it includes representatives of each of the Federal agencies in the city, a representative of at least one minority community organization, city officials and representatives of private resources.

The Washington MBOC, as a pilot effort, has assembled a list of local procurement officers for each federal agency in the District of Columbia area. From this list, local affiliates of the Office of Minority Business Enterprise can match even the smallest minority business operation to a Federal procurement offer.

Operators of the paper product company and the ground maintenance concern in Washington are among scores of small minority businessmen who will be getting Federal small purchase awards.

"The program is working so well we probably will extend it to the private sector as well as to the other MBOC's," said OMBE's Sherman Funk, chairman of the Washington committee.

Example of effectiveness

MBOC's effectiveness as a communications vehicle, a way for the locals to reach the "feds" is dramatized in the help given a financially troubled minority-owned concern.

Facing default on its government contracts and mounting tax problems which were certain to bring a lien from the Internal Revenue Service, that concern turned to its local MBOC for advice. The community organization supporting the minority enterprise happened to hold membership in the MBOC.

The firm's problems were brought before a regular meeting with a simple "what can we do?"

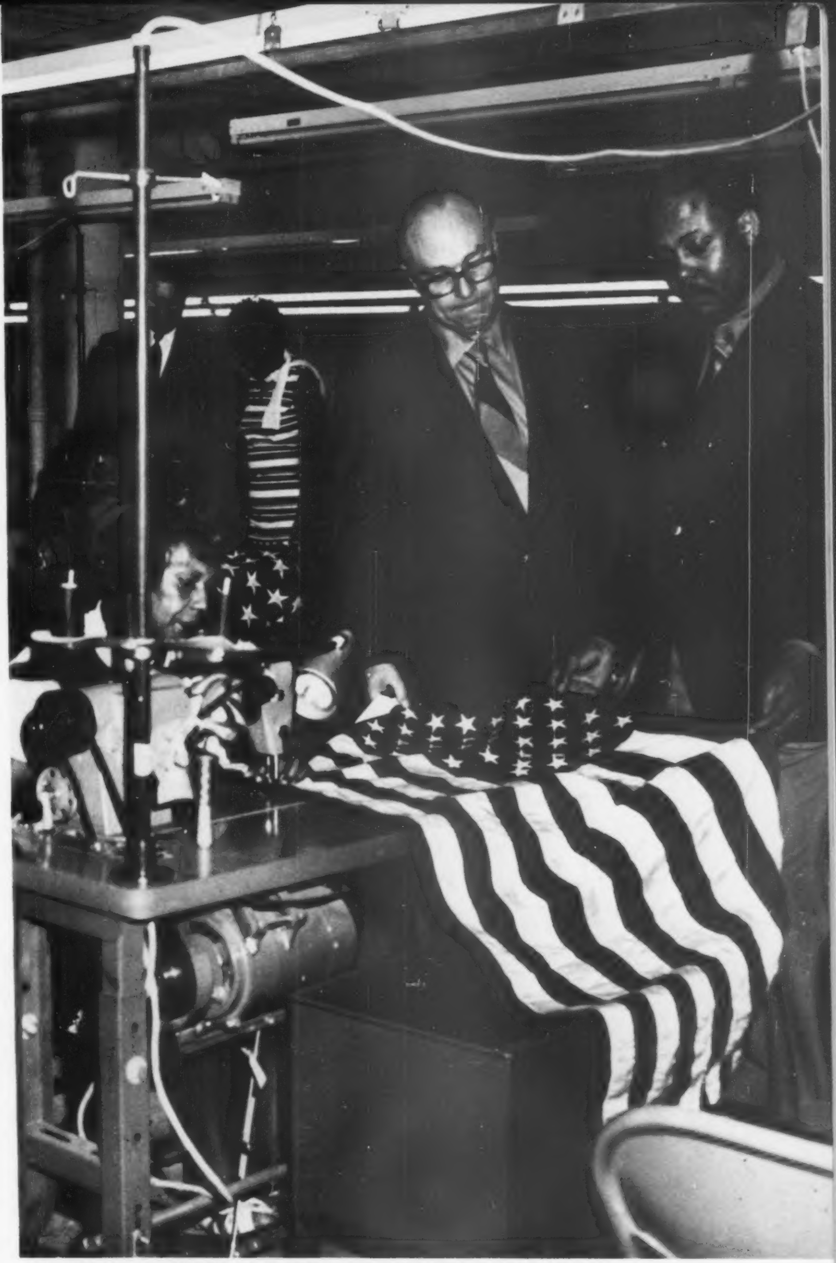
Meetings were scheduled with the government agency which was ready to hold the company in default on its printing contract, and with the Internal Revenue Service. The agency agreed to delay any action on the contract.

The Internal Revenue Service agreed to grant additional time for payment of taxes if the firm would promise to seek special management assistance.

MBOC sought the aid of a national trade association which sent an expert from New York to give technical assistance free of charge.

P.S.—the troubled firm was saved from financial disaster.

The committee, in each city, is able to focus support from many agencies on local projects, which will be one of the ingredients to build towards success for minority enterprises in each locale served by a MBOC.



STARS AND STRIPES IN TEXAS—*A $286,193 contract for the manufacture of 39,420 American flags was awarded the black-owned House of Brian Christopher, in Dallas. M. T. Klein, left, a Small Business Administration official, and H. Rhett Jones, owner of the firm, watch a worker sew the stars and stripes. The minority contract was let under a section of the Small Business Act. General Services Administration procures most of the Federal government flags.*

In Dallas, the MBOC played a key role in matching Garland Food Co. with the Department of Defense. The Dallas food processor was given a $5 million contract to provide canned hams to the military.

In Boston, the MBOC developed a program with the Internal Revenue Service to "flag" businesses experiencing serious tax delinquencies. In some cases extensions were pro-

Wylie Centre Industries Inc., a Pittsburgh company "of, by and for the minority community," was formed by Aluminum Company of America and the United Black Front. Alcoa is a member of the Pittsburgh Minority Business Opportunity Committee, which receives heavy support from the industrial community. Wylie began production of aluminum nails in March and, within a few weeks, plans to be producing a million nails a day for many uses, including home and farm construction.

vided minority businessmen who agreed to accept technical assistance.

Despite some difficulties in the Internal Revenue Service program, it is being initiated by the Washington area MBOC which concluded "the potential benefit warrants a go ahead."

A major problem experienced in Boston was the Internal Revenue Service's inability to identify firms in trouble long enough in advance to offer really "preventive" assistance. Internal Revenue Service usually is not aware itself that firms are in serious trouble until two or more tax payments have been missed. By this time the minority businessmen may be hopelessly over their heads.

Since minority firms have sharply limited access to bank resources, they frequently wind up in trouble with the Internal Revenue Service. The pressed businessman may use tax dollars he owes as working capital. This quickly snowballs his tax delinquency and compounds his financial troubles.

When firms have obligations outstanding to the Internal Revenue Service, the Small Business Administration tends to take a jaundiced view of them which reduces their chances of obtaining financial assistance. If they do succeed in getting bank loans, the money almost always is used to pay off their tax obligations instead of using it as the working capital they so desperately need.

Although matching the buyer with the seller is MBOC's major accomplishment, it is continually involved. OMBE affiliates do the matching and contacting the agencies. Small Business Administration is involved.

MBOC serves as a catalyst and an innovator, a communicator that means business for minority entrepreneurs.

—Office of Minority Business Enterprise

COMMERCIAL
TRUCK TRAILER

IN DALLAS—*Commercial Truck and Trailer, a minority-owned spray painting and body and fender repair shop, gets rolling with the help of a Dallas Minority Enterprise Small Business Investment Company and interagency support. MBOC committees play key roles in minority enterprise assistance.*

Better Underground Communications Sought For Miners

Interagency Task Difficult, But Effective Equipment Needed To Save Miners' Lives

Remote from the scenes of a coal-mine tragedy, a group of engineers working in the field of mine safety is developing equipment intended to reduce the number of coal-mine disasters and make possible more effective rescue operations for miners when disaster strikes.

This is the goal of a cooperative undertaking between Commerce's National Bureau of Standards and the U.S. Bureau of Mines of the Department of the Interior. The task admittedly is difficult, but those engaged in it hope that major problems relating to mine safety can be solved.

The work is being carried out under the Federal Coal Mine Health and Safety Act of 1969, which among other things authorized funds for research and development in the area of mine safety. The Act was passed by Congress after a series of widely headlined mine disasters, including the Farmington, West Virginia, tragedy in 1968.

In an effort to improve the safety of coal miners, the Bureau of Mines' Systems Engineering Group in Denver asked the Electromagnetics Division of the Bureau of Standards in Boulder, Colorado, to serve as consultant and technical adviser in matters relating to mine-communication equipment

NERVE CENTER—*The dispatcher maintains contact with all units, and regulates traffic flow throughout the mine. This man works at the Ireland Mine of Consolidation Coal near Moundsville, West Virginia.*

U.S. BUREAU OF MINES EXPERIMENTAL MINE 19

GRIM BUSINESS—*Although it's only a research project, these miners at the test facility are deadly serious as they prepare for a rescue drill.*

and electronic devices. The assistance given by the Electromagnetics Division is the beginning of an expanding program that is expected to involve several divisions of the Bureau of Standards, which traditionally has provided central scientific and technical support for other Government agencies. The work of the Bureau of Mines and the Bureau of Standards is part of a broad effort to improve the safety of coal miners. In this effort, a number of industrial firms and educational institutions are involved.

A major problem, engineers explain, is the development of more effective communications equipment, particularly equipment that can be used in everyday operations as well as in disasters.

At present, coal mine communication systems depend on telephones, using field wire or carrier systems that use the rails on which coal cars are operated. Permissible components are used throughout; that is, devices that the Bureau of Mines has certified will not cause explosions. Most of the large mines have both these systems, but some of the small mines do not have the carrier system. In any case there are certain drawbacks to the present equipment. One is that in the event of a massive explosion and fire, the communications equipment is most likely knocked out. Another handicap is that the telephones may not extend beyond the last cross-cut in the mines, so that the last phone may be several hundred feet from where the miners are digging coal. The result is that emergency messages intended for working miners often are delayed five minutes or more. Usually a mine foreman who knows where the miners are will have to carry a message to the recipient. Added delay may be caused if the mine is blocked by haulage cars. If the message to the working miners is notice of a disaster, or an order to clear the mine, the delay could mean the difference between life and death.

Instant communication

To solve the problem, an effort is being made to develop portable radio-type or wireless communications equipment that could be kept close to where miners are at work and that would transmit messages through coal, rock and earth to the surface, or messages from the surface or from other locations in the mine to the miners. This would permit instant communication of warnings or other messages to the miners, and from trapped miners to the surface in order to direct rescue operations. Considerable work in developing such equipment has been done, but the hostile environment of a coal mine presents problems that still have to be solved.

Environmental difficulties include temperature variations of from 20°F to 80°F in a mine, relative humidity up to 100 percent, dust density 10 to 100 times the air pollution in larger cities, and high noise levels when mining equipment is working. No laboratory, researchers point out, has this kind of environment. They add that equipment which works well in a laboratory or other less-hostile environment may prove impractical in coal mines.

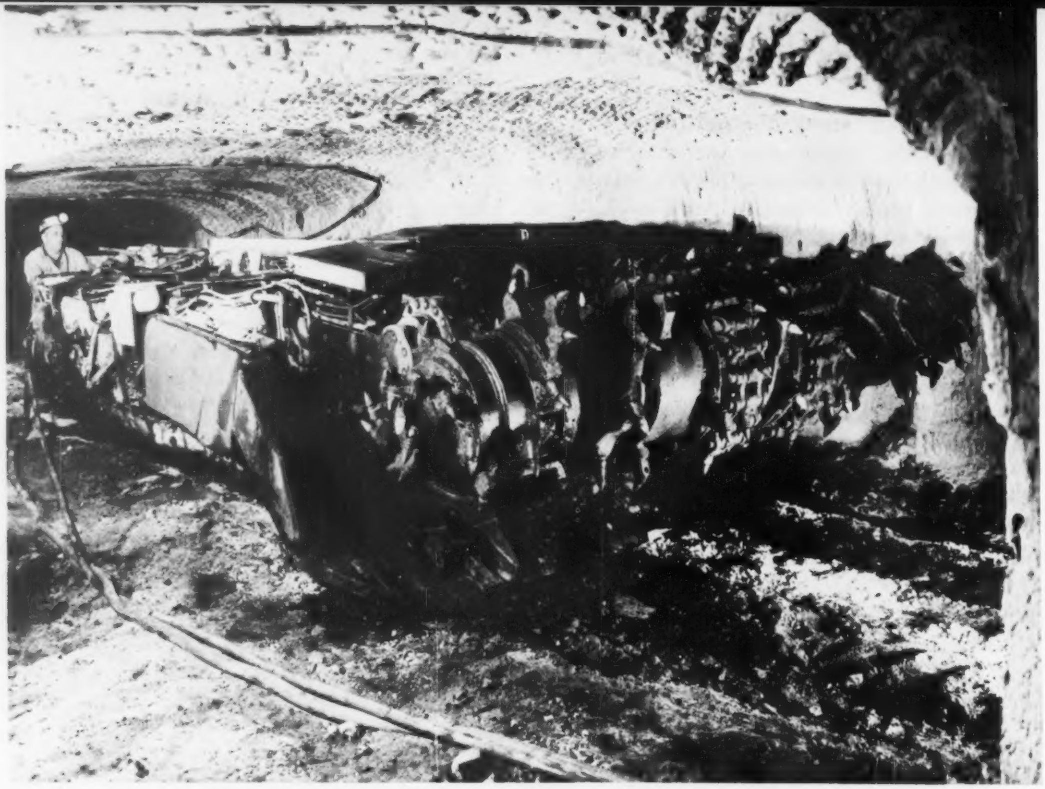
In developing satisfactory radio-type communication equipment, engineers find that because of the earth's attenuation, which increases with higher frequencies, they must operate at the lowest possible frequency. On the other hand, antennas suitable for low frequency use are excessively large and heavy; this requires use of higher frequencies. Thus a compromise must be reached. Another disturbing influence is electromagnetic interference which may interfere with signals at different frequencies; these interfering signals vary in frequency from mine to mine.

If the upper frequency limit is less than 3500 Hz (cycles per second), the human voice becomes increasingly unintelligible. The conclusion is that, in whatever equipment eventually is developed, the human voice may be a luxury that cannot be afforded, even though it would be more desirable. While Morse code will not be used, something similar may be developed. Equipment designers anticipate adopting a push-button system of precoded messages drafted to meet general situations. Such messages would be transmitted whenever the appropriate situations arose.

Engineers explain that much more development work must be done, and the state of the art pushed forward in several areas, before anything of practical use in coal mines can be developed. Aside from assisting in work on radio-type communications equipment, the Electromagnetics Division of the Bureau of Standards is serving as contact between the Bureau of Mines and many of the Bureau of Standards' mine-related programs. The appropriate NBS staff members can be called upon for consultation and other specific tasks as required by the Bureau of Mines.

Other major problems facing engineers include the development of more effective and accurate equipment to measure methane (an

POTENTIAL BLOCKADE—*Disabled equipment is another possible delay for hand-carried messages to miners working beyond the limits of the telephone system or where the phones have been knocked out.*



THE FRESH AIR PROBLEM—*A variety of new test devices are needed to detect the level of gases and to measure air flow rates. This machine features ducts for blowing fresh air to the operator's face.*

explosive gas often found in coal mines), air flow rates, concentration of carbon monoxide, carbon dioxide, oxygen, and dust content. Development of such equipment ties in with the problem of better communications, because it is essential to know precisely what prospective danger may be present before miners can be warned of impending danger.

Methane detection still uses the old davy-flame safety lamp, and while the lamp is said to be very good for hand use, engineers see the need for a better instrument. In some cases, ignitions are attributed to the lamp itself. There are other devices used for methane detection, but scientists say that none is a satisfactory instrument for use either by mine personnel or as remote sensors in a mine environment.

An anemometer often is used for measuring air flow rates, except below a certain level, where a smoke tube may be used. A small cloud of smoke is released and measurement is taken of the time it requires to travel a stated distance. To measure dust content, a sample of air is taken, which may have to be transported outside the mine to determine the dust count. A need exists for a dust-measurement device that will make an on-the-spot reading.

Trouble sources in coal mines often are inter-related; one problem frequently leads to another. Highly important in coal mines is fresh-air flow into the mine to keep down the methane content (as well as other gases) in the air. It should be a minimum rate of one foot per second. In the event of a power failure, the ventilation fans and fresh-air flow cease, and the methane concentration may increase rapidly. Also other gas concentration can build up to dangerous levels. Methane is regarded as potentially explosive if it reaches a five-percent level, and even lower levels are a source of concern. Mining operations frequently produce sparks despite the many precautions taken. Ignited methane may lead to a dust explosion that could race violently through miles of tunnels. Combustion then produces carbon monoxide, the silent killer that requires chemical or mechanical methods to detect its presence. Carbon monoxide can be a special danger in other mines, such as copper mines, where diesel equipment is used for haulage.

Thus those working on the problem of better mine-safety equipment are confronted with a chain of challenges; an answer in one area will likely have a bearing on problems in others. While much of the work is in the initial stages, the hoped for success promises a safer environment for the miners of the nation.

—National Bureau of Standards

Talks In Madrid Note Growing U.S.-Spain Commercial Relations

American Investors To Be Encouraged Further, Spaniards Offer Incentives; Tourism Gains Seen

Current business opportunities in six nations across the Atlantic were the focus of talks with leaders in those countries by a team of Commerce Department trade officials led by Secretary Stans. This report covers the observations made at meetings in Spain in the spring. A report on Ireland was published in the May 31 issue. Subsequent reports will discuss Greece, Iran, Romania and Austria. Commerce Department trade officials who accompanied Secretary Stans on the visit were Robert McLellan, Assistant Secretary for Domestic and International Business; Lawrence A. Fox, Deputy Assistant Secretary for International Economic Policy, and Tom McSpadden, Special Assistant to Mr. McLellan.

The continuing expansion of commercial relationships between the United States and Spain was noted by Secretary Stans during his Madrid visit. Not only does the United States enjoy the role of being Spain's main supplier, but serves as her principal customer as well—a situation of great reciprocal benefit. Contributing heavily to the mutually beneficial arrangement is that Spain's import surplus with the United States is about counter-balanced by substantial American investments and tourist receipts.

Extension of earlier talks

Secretary Stans visited Spain at the invitation of Spain's Minister of Commerce, Enrique Fontana Codina, to continue talks initiated in Washington earlier in the year. During the course of his official visit Secretary Stans also met with the Chief of State, General Francisco Franco; Minister of Foreign Affairs Gregorio Lopez Bravo; Minister of Industry Jose Maria Lopez de Letona; and the Minister of Development Planning Laureano Lopez Rodo.

In the talks between Secretary Stans and Minister Fontana it was noted that foreign investments in Spain have played a significant role in the rapid economic expansion and growth of the Spanish economy. Direct investment from the U.S. alone was estimated at over $700 million at the beginning of 1971. In addition, plant and equipment expenditures in Spain by U.S. affiliates have

AT EL PARDO PALACE—*On outskirts of Madrid, Secretary of Commerce Maurice H. Stans met with Spain's Chief of State, General Francisco Franco.*

averaged over $150 million for the past two years and are projected at more than $230 million for 1971.

In this context, Secretary Stans indicated in his conversation with the Spanish Ministers that the U.S. Government is prepared to further encourage private U.S. investors to enter Spain and to take part in the remarkable economic development evident in Spain. The Secretary invited the Ministers to draw up lists of investment priorities which would then receive special attention in the United States.

On its part, the Spanish Government has welcomed foreign investments as significant to the continued economic development of the country. Foreign investment projects for which Spain now shows the greatest enthusiasm are those which have an important base of modern technology and which contribute directly to Spanish industrial development or which demonstrate a high potential for exports.

In a recent development, the Export-Import Bank of the United States has announced that it will help finance $15.9 million in sales of U.S. equipment and services to Altos Hornos de Vizcaya of Spain, which is affiliated with the U.S. Steel Corp.

In addition to encouragement of foreign investments in general, Spain has offered substantial investment incentives in certain development regions throughout the country under its "polo" program. (Detailed information regarding investment opportunities in Spain may be obtained from the Embassy of Spain, Commercial Office, 2558 Massachusetts Ave., N.W., Washington, D.C. 20008.)

Still another incentive scheme is Spain's "concerted action" program designed to restructure certain industries in an effort to make them more efficient and competitive. Industries presently eligible for special benefits under the program include shipbuilding, iron ore and coal mining, textile, steel, flour milling, vegetable canning and leather.

During the course of his visit to Spain, Secretary Stans had the opportunity to meet with leading members of the American business community representing such firms as Chrysler International, Firestone, General Electric, Gulf Oil, Parke Davis, Sears Roebuck, Standard Oil, U.S. Steel, Westinghouse.

Tourism in Spain

Tourism, it was noted in the Madrid talks, has been a phenomenally growing source of revenue in the Spanish economy. From four million tourists in 1960, the number of visitors has climbed to 24 million in 1970, almost matching the country's own population. Income of over $1.6 billion earned from tourism in 1970 went far in balancing out Spain's substantial trade deficit. The Spanish Government is determined to expand tourism further; consequently the tourist industry offers excellent opportunities for foreign invest-

Foreign investments have played a significant role in the growth of the Spanish economy, and many industries currently would benefit from such participation.

Spain's Minister of Industry, Lopez de Letona, in discussions with the Secretary identified a number of areas in which the Spanish Government considers the need for U.S. capital participation a matter of priority.

Among the sectors offering investment opportunities are atomic power generation, shipbuilding installations, and the chemical and steel industries. The Spanish Government is also interested in modernization of its coal industry and creation of a basic electronic industry under the auspices of the State-owned industrial group INI.

ment. Predicting that Spain's 40,000 tourist accommodations will grow to 100,000 within the next decade, Spain's Minister of Information and Tourism recently stated that only about 15 percent of the country's potential in this field had thus far been achieved.

In his discussion with the Spanish Ministers, Secretary Stans offered the assistance and advice of the Department of Commerce in travel promotion techniques and in contacting U.S. companies interested in investing or managing hotel facilities. The Secretary also expressed the hope that more Spanish tourists will visit the United States.

Current economic situation

It was described to the American officials how the Spanish Government had moved to check the overheated economy that prevailed in 1969 and which resulted in severe inflationary pressures and a serious deterioration in its balance of payments.

As a result of monetary measures taken by the Government in early 1970, Spain was able to reduce its real rate of growth from the too rapid 7.7 percent of 1969 to a more tolerable rate estimated at 6.4 percent in 1970 which is much closer to the 5.5 percent growth target established by the Second Economic and Social Development Plan.

In addition, there was a spectacular improvement in the Spanish balance of payments in which official reserves climbed from $833 million at the end of 1969 to $1,917 million by March 1971. This improvement was due to a cutback in the increase of imports, substantial increases in foreign exchange earnings from tourism and emigrant remittances, an increase in foreign investment, and a government-imposed credit squeeze which resulted in large inflows of short-term capital.

While the Government's program to limit the growth of domestic demand and improve the balance of payments was successful, it brought with it a slowdown in business activity and diminished business confidence in the second half of 1970. The economy can be expected to resume growth by the second half of 1971 because of proposed increases in public sector spending in 1971; rising personal incomes resulting from the government's relaxation on wage controls; the continued balance of payments surplus; the strong expansion of exports; and the ability of the financial sector to finance a major expansion of private investment with bank liquidity at a high level.

In his talks with the Spanish Minister of Commerce, Secretary Stans noted the excellent trading relationship between the two countries in which the United States purchases more Spanish exports than any other nation and in which the U.S. is also Spain's leading supplier. U.S. exports to Spain in 1970 increased to $896 million (c.i.f.) and accounted for an 18.9 percent share of the Spanish market. Spanish exports to the U.S. increased by 18 percent to reach $337 million (f.o.b.). Spain's total imports in 1970 amounted to $4,747 million (c.i.f.) as against $2,387 million (f.o.b.) in exports.

The Spain-EEC Preferential Trading Agreement which went into effect last Oct. 1 will, to some degree, affect U.S.-Spanish trade. U.S. exporters should keep in mind that the Common Market countries which are already competitive in the Spanish market will become even more so in certain lines as a result of the new trade ties. U.S. companies can also expect their Spanish customers to become increasingly alert to alternative sources of supply.

Under the terms of the Agreement, Spain

TOURISM IN SPAIN—*From 4 million in 1960, the number of foreign tourists in Spain climbed to 24 million in 1970, illustrating the foreign investment possibilities in this industry. Spain's traditional and modern attractions coincide here at Alicante.*

CONFERENCE IN MADRID—*Spanish-U.S. commercial relationships were discussed here by, from left, Spanish Ambassador to the U.S. Jaime Arguelles; U.S. Ambassador to Spain Robert C. Hill; Peter Danos, president of the American Chamber of Commerce in Spain; Secretary Stans, and Spanish Minister of Commerce Enrique Fontana Codina. Stans was a speaker at the Chamber luncheon meeting.*

will reduce its tariffs on certain EEC products in stages by 25 to 60 percent over a six-year period while the EEC will reduce its duty rates on most industrial imports from Spain in stages up to 60 percent by 1973.

Spain's future development will, in part, be guided by the Third Economic and Social Development Plan for 1972-75 which is still in the drafting stage. Although few details have as yet been made public, it is believed that the average annual GNP growth target will be set somewhere between 6.0 percent and 7.0 percent, compared to the 5.5 percent goal of the Second Plan. The new plan is said to stress social improvements, particularly in education, tax reform, housing, employment, and worker welfare. Housing development will be encouraged by extending credit on a short-range basis for builders and on a long-range basis for buyers.

U.S. PARTICIPATION—*Marconi Espanola is an ITT associated company in Spain. Above, firm's engineers in Madrid check maritime position finders.*

Implication for U.S.

There is little doubt that the Spanish economy can in fact grow at this rate and the Spanish Government's decision to pursue a policy of rapid growth will have important implication for the United States. The Plan should offer an expanding market for U.S. exports, as well as a continuing incentive for direct investment in Spain by American companies.

As Secretary Stans remarked in his address before the American Chamber of Commerce in Spain, the U.S. and Spain do have certain trade problems which need to be resolved but he is confident that all of these problems are amenable to a solution satisfactory to both nations. And, in the words of the Secretary, "we look forward to a continued strengthening of the friendship in trade and investment which now prevails between our two countries."

DOMESTIC BUSINESS REPORT

- Commercial shipping research begins
- Paper industry exports top $1.1 billion
- Supertankers get new birthplace
- New U.S. population density figures
- Glass container shipments rising

Shipping Operations, Collisions To Be Studied At New Center

The first research center in the United States devoted specifically to improving commercial shipping operations and avoiding collisions and other accidents at sea has been established at the U.S. Merchant Marine Academy at Kings Point, New York.

Formally known as the National Maritime Research Center, it was dedicated at a ceremony at the Academy June 9. Speakers included A. E. Gibson, Assistant Secretary of Commerce for Maritime Affairs; Coast Guard Rear Admiral Arthur B. Engel USCG (Ret.), Superintendent of the Academy; and Marvin Pitkin, Ass't Administrator for Research and Development of Commerce's Maritime Administration, the Academy parent agency.

The new facility has three main functions:

—Carrying out research programs for the Maritime Administration in which it will concentrate on problems involving the operation of machines by human hands and on human engineering.

—Serving as a field test and evaluation unit where proposed improvements developed by the Maritime Administration, the shipping industry, or academic institutions can be fully tested under simulated operating conditions before being recommended for installation in ships of the American Merchant Marine.

—Assisting the transfer of technical information among the various segments of the shipping industry by sponsoring conferences and seminars.

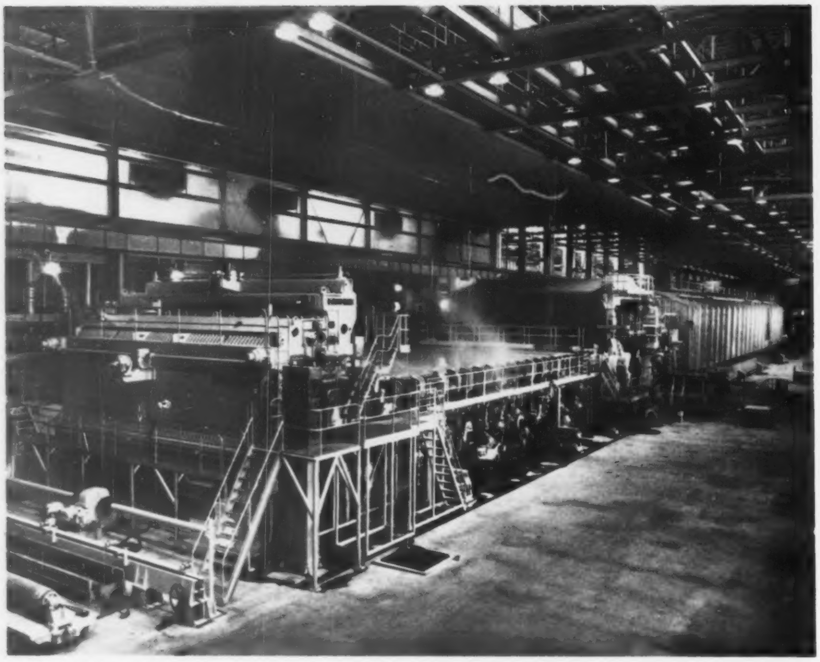
Much of the center's work, Gibson said, will be done by the faculty of the Academy. The fact that faculty members are available, he emphasized, was one of the reasons for locating the facility at the Academy. Pointing up the educational value of the center, he said:

"It will have an important beneficial side effect for Kings Point. Professors performing research at the center will become familiar with the latest advances in maritime technology, as well as operational problems currently facing the shipping industry. They will carry this expertise and exposure back to their classrooms, thus enriching the education Kings Point midshipmen receive."

The Director of the center is Captain Lauren McCready, U.S. Maritime Service, who formerly was head of the Academy's Department of Engineering. Dr. D.L. Jaffee is Deputy Director.

The center will engage in a wide range of other research work, including oceanographic studies, investigating ways to get more service from a ship, testing corrosion-resistant marine paints and coatings, and administering the "ships of opportunity" program under which merchant ships at sea are enlisted to test equipment.

—*Maritime Administration*



GIANT IN INDUSTRY—*This papermaking machine—largest in the world—is owned by Bowaters Carolina Corp. For the first time in the history of the industry, exports of paper products topped $1 billion in 1970 and are still climbing.*

Paper Industry Exports Pass $1 Billion, Still Rising

U.S. exports of pulp, wastepaper, paper, paperboard and related products increased 27 percent to a record $1.1 billion and are still climbing, the Bureau of Domestic Commerce reported.

Total export values in the paper industry have nearly doubled during the past five years. A quarterly report of BDC's Forest Products, Packaging, Printing and Publishing Division, noted that the value of all export by the industry, including pulpwood, logs and other materials, rose from $855 million in 1968 to $934 million in 1969, to $1,169 million last year.

Linerboard and bleached sulfate pulp together accounted for more than half of total exports by the paper industry in 1970. Linerboard totaled 1,761,000 tons valued at $219 million. Bleached sulfate pulp climbed 63 percent over 1969 to reach 1,567,000 tons, valued at $217 million.

Wastepaper exports gained 40 percent in 1970 to reach 408,000 tons, valued at $24 million. Bleached sulfite pulp exports increased 43 percent over 1969 to 359,000 tons, valued at $49 million.

Shipments of special alpha and dissolving pulp, used in overseas textile industries, amounted to 869,000 tons in 1970 and was valued at $163 million.

Total U.S. foreign trade activity in pulp and paper amounted to $2.7 billion in 1970, of which exports represented 43 percent. Imports into the United States of all pulp, paper and board products, mostly Canadian newsprint and pulp, were valued at $1,603 million in 1970, one percent less than 1969.

Because total import volumes have shown little growth in recent years, most of the gains in foreign trade have been generated by exports rather than imports.

The six-nation European Economic Community is the chief foreign market for products of the U.S. paper industry. Exports to those countries last year totaled nearly 1.9 million tons and was valued at $309 million.

U.S. exports of pulp, to the U.S.S.R., Romania, Hungary, and Poland—increased sharply in 1970—to 112,000 tons, valued at $21 million. This represents a 38 percent increase over 1969.

Exports to Europe represented 48 percent of all U.S. pulp, paper and board exports in 1970, totaling over three million tons and valued at $516 million. This is 29 percent ahead of 1969.

The United Kingdom, West Germany, Italy, Japan and Canada took half of all the volume of all U.S. exports of pulp, paper and board.

The United Kingdom remained the largest single foreign market for U.S. exports with a 1970 volume of 727,500 tons having a value of $118 million and equal to 11 percent of the quantity of all pulp, paper and board exports.

West Germany was second with 617,500 tons, valued at $103 million. This represents an increase of 17 percent over 1969.

Italy provided the third largest market of 540,000 tons, valued at $78 million. Japan, as the fourth largest market, received 499,000 tons, valued at $77 million.

Linerboard, bleached and unbleached sulfate pulp, dissolving pulp, wastepaper, bleached sulfite pulp, newsprint and boxboard—the eight principal export products of the paper industry—represented 86 percent of all foreign shipments in 1970 and showed a combined quantity gain of 27 percent between 1969 and 1970.

The quarterly industry report, Pulp, Paper and Board, is available at 25 cents per copy from the Department of Commerce, Sales and Distribution Branch, Washington, D.C., 20230, or any Commerce Field Office.

—Bureau of Domestic Commerce

Hemisphere's Top Supertanker Basin Opens In U.S.

A new shipbuilding basin at Bethlehem Steel Corporation's Sparrows Point, Md., shipyard will be the birthplace of supertankers and other vessels up to 300,000 deadweight tons.

The basin, largest in the Western Hemisphere, was dedicated last month. Located on the Patapsco River outside Baltimore, the new facility is part of a 172-acre shipyard complex. Its inside dimensions are 1,200 feet in length, 200 feet in width and 37 feet, six inches deep.

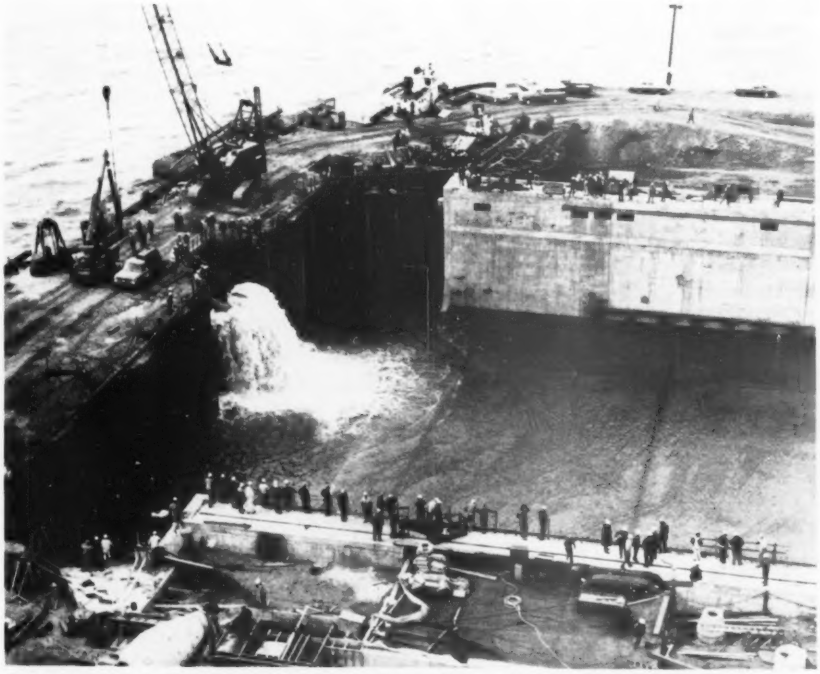
When occupied by the largest ship hulk that can be accommodated, the basin can be filled with water by gravity flow in 12 hours. When unoccupied, it can be dewatered in 24 hours by pumping.

Its supersize capacity is in stark contrast to the popular 37,000 deadweight ton tankers that the shipyard produced in recent years. The present order book, according to Bethlehem Steel, includes two large containerships, four 120,000 deadweight ton size tankers, six 70,000 deadweight ton tankers, a chemical carrier and one forebody. Work on these vessels will sustain the present level of operation and the existing work force of some 4,100 persons into 1973.

Stewart S. Cort, chairman of Bethlehem Steel, dedicated the new basin, along with a new panel shop and blasting and coating building, part of the yard's improvement plan costing several million dollars. The expansion program, which began in 1968, will increase the total throughput capabilities of the yard by over 50 percent, with an associated improvement in productive efficiency. The panel shop and blasting and coating building are now in operation and the basin is nearing completion.

—Maritime Administration

DEDICATION AND LAUNCHING—*Bethlehem Steel's new shipbuilding basin was dedicated prior to the launching of the* S. S. Sansinena II, *a 70,000 deadweight tanker and largest vessel ever built in Baltimore. The* Sansinena II *is shown on the ways of the Sparrows Point yard, to the left of the empty building basin.*



BELOW SEA LEVEL WATERFALL—*Water from the Patapsco River forms a waterfall as it gushes, for the first time, into the new shipbuilding basin at Bethlehem Steel's Sparrows Point shipyard. Steel piling cells are removed to allow gate to be floated into place. The basin will be the birthplace of supertankers.*

U.S. POPULATION DENSITY

	1970		*1970*	*1960*
	Land Area in Square Miles	***Resident Population***	***Population Density***	
UNITED STATES	3,536,855	203,184,772	57.4	50.6
Northeast[1]	163,269	48,999,999	300.1	273.4
North Central[2]	751,824	56,577,067	75.3	68.6
South[3]	873,743	62,798,347	71.9	62.8
West[4]	1,748,019	34,809,359	19.9	16.0
STATES				
Alabama	50,708	3,444,165	67.9	64.2
Alaska	566,432	302,173	0.5	0.4
Arizona	113,417	1,772,482	15.6	11.5
Arkansas	51,945	1,923,295	37.0	34.2
California	156,361	19,953,134	127.6	100.4
Colorado	103,766	2,207,259	21.3	16.9
Connecticut	4,862	3,032,217	623.7	520.6
Delaware	1,982	548,104	276.5	225.2
District of Columbia	61	756,510	12,401.8	12,523.9
Florida	54,090	6,789,443	125.5	91.5
Georgia	58,073	4,589,575	79.0	67.8
Hawaii	6,425	769,913	119.8	98.5
Idaho	82,677	713,008	8.6	8.1
Illinois	55,748	11,113,976	199.4	180.4
Indiana	36,097	5,193,669	143.9	128.8
Iowa	55,941	2,825,041	50.5	49.2
Kansas	81,787	2,249,071	27.5	26.6
Kentucky	39,650	3,219,311	81.2	76.2
Louisiana	44,930	3,643,180	81.1	72.2
Maine	30,920	993,663	32.1	31.3
Maryland	9,891	3,922,399	396.6	313.5
Massachusetts	7,826	5,689,170	727.0	657.3
Michigan	56,817	8,875,083	156.2	137.6
Minnesota	79,289	3,805,069	48.0	43.0
Mississippi	47,296	2,216,912	46.9	46.0
Missouri	68,995	4,677,399	67.8	62.6
Montana	145,587	694,409	4.8	4.6
Nebraska	76,483	1,483,791	19.4	18.4
Nevada	109,889	488,738	4.4	2.6
New Hampshire	9,027	737,681	81.7	67.2
New Jersey	7,521	7,168,164	953.1	805.5
New Mexico	121,412	1,016,000	8.4	7.8
New York	47,831	18,190,740	380.3	350.6
North Carolina	48,798	5,082,059	104.1	93.2
North Dakota	69,273	617,761	8.9	9.1
Ohio	40,975	10,652,017	260.0	236.6
Oklahoma	68,782	2,559,253	37.2	33.8
Oregon	96,184	2,091,385	21.7	18.4
Pennsylvania	44,966	11,793,909	262.3	251.4
Rhode Island	1,049	949,723	905.4	819.3
South Carolina	30,225	2,590,516	85.7	78.7
South Dakota	75,955	666,257	8.8	9.0
Tennessee	41,328	3,924,164	95.0	86.2
Texas	262,134	11,196.730	42.7	36.4
Utah	82,096	1,059,273	12.9	10.8
Vermont	9,267	444,732	48.0	42.0
Virginia	39,780	4,648,494	116.9	99.5
Washington	66,570	3,409,169	51.2	42.8
West Virginia	24,070	1,744,237	72.5	77.2
Wisconsin	54,464	4,417,933	81.1	72.6
Wyoming	97,203	332,416	3.4	3.4

[1] The Northeast region includes nine States: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.

[2] The North Central region includes 12 States: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.

[3] The South region includes the District of Columbia and 16 States: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

[4] The West region includes 13 States: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

U.S. Population Density Greater By Seven Persons

If all of the persons living in the United States on April 1, 1970 were distributed equally over the land area of the 50 States and the District of Columbia, there would be slightly more than 57 persons per square mile, compared with 50 a decade ago, says the Census Bureau of the U.S. Department of Commerce.

Closer quarters

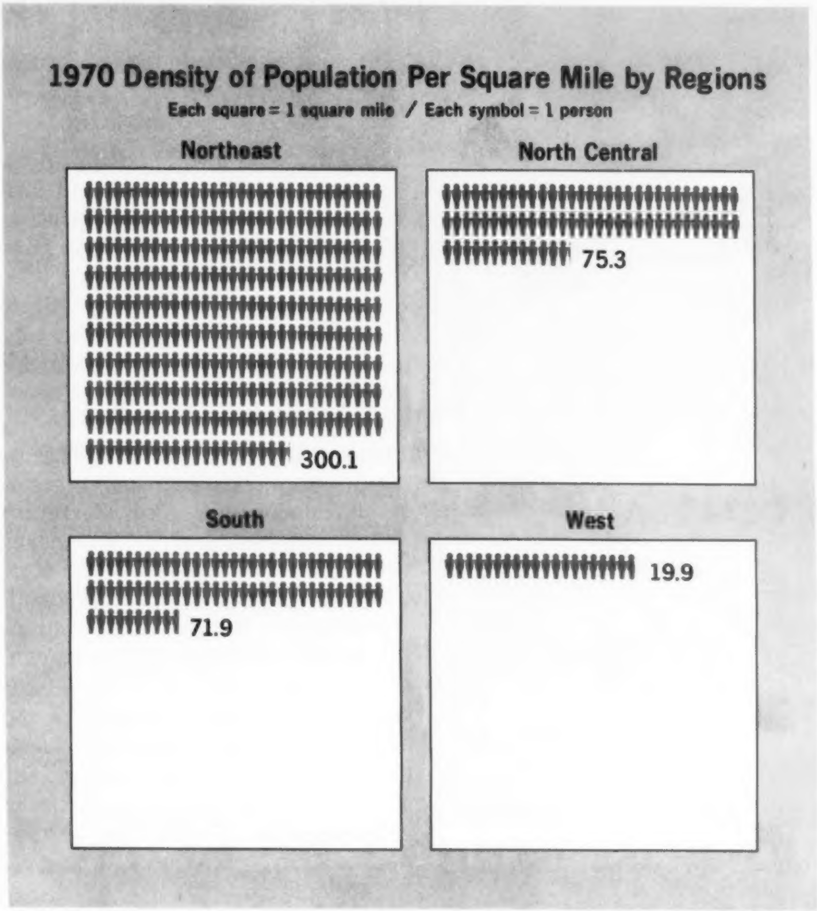
Based on the 1970 census, in fact, the population density of the Nation is 57.4 persons per square mile. In 1960, it was 50.6 inhabitants per square mile, demonstrating an increase of nearly seven persons per each square mile in the ten-year period.

The Census Bureau calculations for the newly released population density pattern are based on the 1970 decennial census resident population figure of 203,184,772, all of whom live within a land area of 3,536,855 square miles, which takes into account not only the continental limits of the country, but also Alaska and Hawaii.

Using this formula, the most densely populated state in the U.S. is now New Jersey, with 953.1 persons per square mile. New Jersey, as the new "king" of density takes the title away from Rhode Island, which had held claim to this crown since the first census in 1790. Rhode Island's present density statistics are 905.4 persons per square mile—nearly 48 persons per square mile less than the new titleholder.

In continental limits

If the population and the land area of Alaska and Hawaii are subtracted, equal distribution of persons living within the continental limits of the U.S. reveals a figure



THE DENSITY STORY—*A vivid illustration of the U.S. population density pattern by four regions shows the wide differences in the number of people living per square mile in the Northeast, the North Central, the South and the West.*

of 68.2 persons per square mile. An equal distribution of Alaskans over that state would give each person two square miles to himself, while the same procedure in Hawaii would result in 120 persons in one square mile.

The region story

Within the four regions used by the Census Bureau to divide the country into the Northeast, North Central, South and West for Bureau calculations, the Northeast registered the highest density count—300 persons per square mile. The North Central was second with 75; the South, third with 72, and the West trailed fourth with 20 persons per square mile.

Comparing the regions' density figures with their land area reveals that the order is just reversed when looking for the land size of each region. The West has the greatest acreage—1,748,019 square miles of land lies in this Census Bureau region. The South is second with 873,743 square miles; the North Central, third with 751,824 square miles; the Northeast last with 163,269 square miles.

The District of Columbia, while not a state, shows up on the table as the most crowded—12,401.8 persons per square mile. It is also interesting to note that Nevada nearly doubled its density in the last ten years, and California, the most populous state in the U.S., now has 27 more people per square mile than was recorded in 1960 when the census was taken.

—Census Bureau

Payrolls Of City Governments Rise

The number of persons employed by cities increased substantially in the last half of the 1960s, and total municipal payrolls expanded even more.

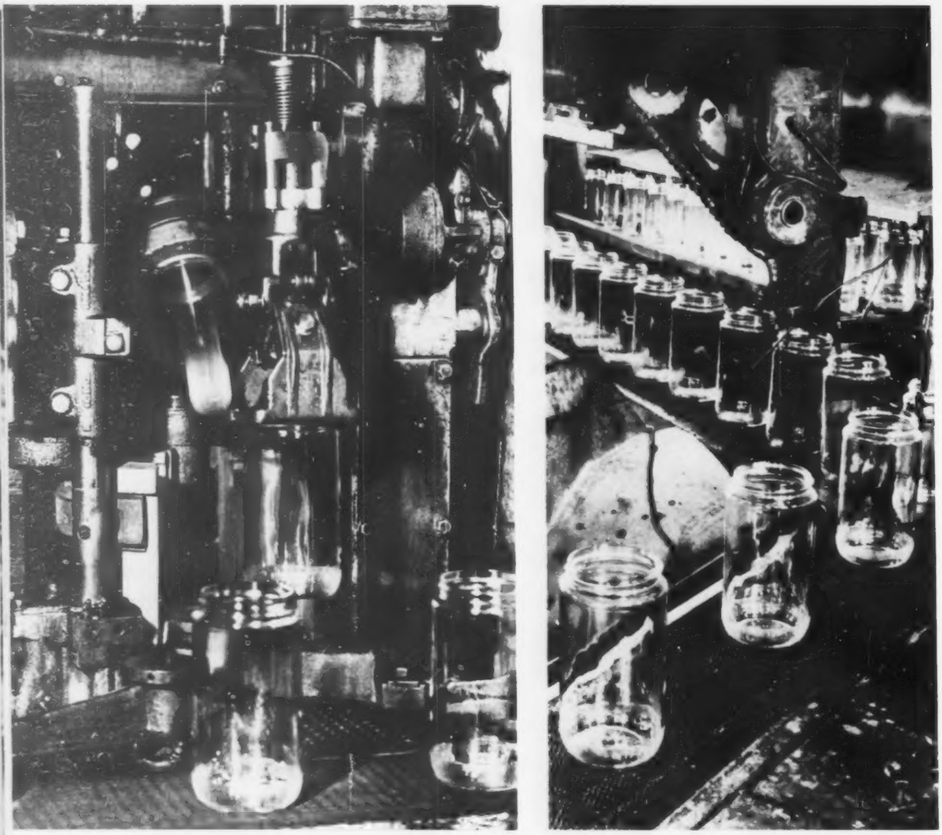
In the five years between 1965 and 1970, city employment rose 17 percent and payrolls 66 percent. At the same time, average monthly earnings of full-time municipal employees in education advanced 39 percent, and of other municipal employees nearly 42 percent.

A report by Commerce's Bureau of the Census, prepared with the assistance of municipal officials throughout the nation, showed that the uptrend was continuing late last year. In October, 2,244,000 persons were employed by municipal governments, of whom 1,851,000 were on a full-time and 393,000 on a part-time basis. According to the Census Bureau, these employees represented a full-time equivalent of 1,922,000 persons.

Municipal employment for the same month showed a gain of 3.4 percent over the total for October of the previous year, when 2,165,000 persons were employed—a full-time equivalent of 1,858,000 persons, with allowance made for those working part-time. Part-time employment, the Census Bureau explained, occurs mainly in small municipalities, and includes numerous elected officials and paid volunteer firemen.

In October, 1970, municipal payrolls totaled $1.4 billion, an increase of $165 million or 13.9 percent over the total for October, 1969. The average monthly earnings of full-time employees in education was $838, a gain of nine percent over the earnings in the same month of the previous year.

(From "City Employment in 1970," GE 70, No. 2, April 1971. For sale by the Bureau of the Census, Washington, D.C. 20233. Price 25 cents.) *—Census Bureau*



ON THE MOVE—*Glass bottle containers are coming off the line, right, faster, and being manufactured, left, faster, to keep up with the new surge in April shipments.*

Glass Container Shipments On Rebound

Richard Cheney, general manager of the Glass Container Manufacturers Institute, has predicted an upturn in glass container shipments. "We expect shipments to pick up considerably from the lower level of January and February," he said.

The industry had expected shipments to drop off early this year because users had stocked up heavily in November and December of last year in anticipation of a price increase.

Cheney's prediction was justified, for by April shipments were up. According to a Current Industrial Report recently issued by the Census Bureau, shipments of narrow neck and wide mouth bottles rose from an April 1970 total of 20,283,000 gross to an April 1971 total of 21,366,000 gross.

The Census Bureau report includes figures on returnable and non-returnable bottles. Shipments of returnable beverage bottles in April 1970 totaled 829,000 gross; in April 1971, they totaled 890,000 gross. On non-returnable beverage bottles, their shipments went from 4,010,000 gross to 4,903,000 gross.

Shipments of returnable beer bottles declined slightly from an April 1970 figure of 330,000 gross to an April 1971 figure of 329,000 gross but shipments of non-returnable beer bottles increased from 4,077,000 gross to 4,553,000 gross.

For additional information on shipments, production, and stocks of glass containers, write to the Industry Division, Census Bureau, Washington, D.C., 20233. Glass Containers, a Current Industrial Report, issued monthly, is available for 15 cents.

—*Census Bureau*

Calendar For Businessmen

June 14-15—Lansing, Mich.—Symposium on Snowmobiles, to analyze the impact of snowmobiles on the environment, the recreation industry and other recreation participants, at Michigan State University. For information contact Dr. Michael Chubb at Michigan State University. Phone: 517-353-0823.

June 15-16 — Sacramento—California State Tourism Conference at Woodlake Inn. Asst. Secretary of Commerce C. Langhorne Washburn will speak. For information contact Hans Engh, chief, office of tourism and visitors service, 1400 10th St., Sacramento, California.

June 17 — Seattle — Puget Sound Governmental Conference meeting to consider recommendations of Environmental Policy Advisory Committee. For information contact Penny Wilson. Phone 206-464-7090.

June 23—Grand Rapids, Mich.—Census Users Conference. For information contact David E. Multack, 412 McKay Tower, Grand Rapids, Michigan 49502. Phone: 616-456-4757.

Ombudsman For Business

Businessmen who need assistance in their dealings with the Federal Government now have a central office in Washington, D.C., to write or call for information, suggestions, or even for registering complaints—the Commerce Department Ombudsman for Business.

All inquiries should be addressed to the Ombudsman, Thomas E. Drumm, Jr., Special Assistant to the Secretary, U.S. Department of Commerce, Washington, D.C. 20230, or call 202-967-3178.

SCIENCE & TECHNOLOGY REPORT

- **Federal environment reports to be centralized**
- **Weather Service seeks better short-range forecasts**
- **Panel calls for regulating fuel additives**
- **Seeding studies may help moderate Great Lakes storms**
- **Voluntary product standards on four items published**
- **Patents of special interest**

NTIS To Be Central Distribution Unit For U.S. Environmental Statements

The public will soon be able to subscribe, from one source, to the environmental impact statements of all Government agencies.

The service will be initiated on July 1 by the Commerce Department's National Technical Information Service (NTIS).

"Business, industry, lawyers, researchers, and the general public have a continuing need for the environmental impact statements," according to James H. Wakelin, Jr., Assistant Secretary of Commerce for Science and Technology. "The Council on Environmental Quality recently issued revised guidelines requiring agencies to do three new things: to make public a draft environmental impact statement at least 90 days before a proposed action; to disclose other agencies' comments when received; and to issue a final statement taking agency and public comment into account at least 30 days before acting. We have made this arrangement with the CEQ so that the public can purchase all statements, inexpensively, from one convenient place."

The National Environmental Policy Act of 1969 and the Council's guidelines issued under Executive Order 11514 of March 4, 1970 require all Federal agencies to file environmental impact statements with the CEQ. Such statements are required in connection with any major action or recommendation or report on legislation that significantly affects the environment.

NTIS will begin, no later than July, announcing all environmental impact statements, as soon as they can be processed, through its semimonthly Announcement Series No. 68, "Environmental Pollution and Control." This announcement series will continue to abstract Government reports in air, noise, solid wastes, and water pollution and control. An annual subscription costs $5 and can be ordered from the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22151.

Any environmental impact statement can be ordered in paper copy for $3. A final statement in microfiche form will cost 95 cents NTIS also is providing a special "package" in which the subscriber receives all environmental impact statements in microfiche form for 35 cents each. A similar service in paper copy may be offered if there is a demand. —*NTIS*

GETTING THE WORD—*Information collected by satellite receiving equipment such as this will be included in the short-range forecasting program to be conducted by a new NOAA experimental facility.*

Weather Observation Plan Seeks Better Short-Range, Local Forecasts

For the farmer, the aviator and the picnicker, the short-range weather forecast for the local area can play a large part in forming the day's activities.

To provide improved local forecasts of imminent weather conditions, the National Oceanic and Atmospheric Administration has announced a program establishing an experimental facility to develop the techniques, equipment and procedures needed for more accurate, short-range predictions. Plans also include developing an educational program in this field on the graduate and undergraduate levels.

The experimental installation, called the Operational Field Test Facility, will have its own weather office and a specially-designed observing network. According to Dr. Robert M. White, NOAA Administrator, the new program will put "particular emphasis on the 0- to 6-hour time period of weather service to the general public."

General and special uses

The new program could eventually help fulfill the needs of both the general public and special user groups through better, more timely forecasts and warnings of atmospheric conditions expected within six hours and 100 miles, weather systems of a size meteorologically referred to as mesoscale. Currently, weather conditions on this scale are not regularly observed by NOAA's National Weather Service. The usual large-scale forecasts do not contain enough details for adequately predicting more immediate weather behavior.

The Field Facility will test, evaluate, and occasionally develop weather observation and measurement systems, forecasting techniques, internal forecast office procedures, provide services to user groups, and support other data-gathering projects.

Probable location

Although final selection of the Facility's site has not been made, it will probably be located in an area that provides exposure to a wide variety of weather conditions, the influence of a large urban complex, the experience of serving a diversified group of end-users, and the availability of scientific and academic facilities.

To combat the current shortages of personnel trained in mesoscale meteorology, the planned training program will give scholarships plus offer grants or contracts to one or more colleges to conduct this program for NOAA.

A growing body of new equipment and techniques will be available for testing at the facility:

- Use of temperature measurements derived from satellite soundings,
- Automated composition of weather messages,
- Alternative staffing arrangements and various combinations of personnel and automation,
- Computer techniques for retrieval and display of data such as satellite and radar information,
- Statistical prediction techniques, and
- Techniques for predicting atmospheric turbulence and diffusion in support of air pollution control activities.

Initially, an experimental weather observation network will be set up and a Facility Weather Office organized to manage and use the network. In the future, the Weather Office would provide operational weather services to the public.

—NOAA

Panel Calls For Laws Regulating Auto Fuel Additives Such As Lead

Congress should regulate automotive fuel additives and components as part of the National Automotive Emissions Control Program, according to a report of the Commerce Technical Advisory Board's Panel on Automotive Fuels and Air Pollution. The regulatory power, the panel said, should be reposed in the Administrator of the Environmental Protection Agency.

The panel, which is strictly advisory, issued 12 recommendations in its report on problems involved in producing lead-free gasoline in the next few years. The report was presented to Secretary Stans.

Lower octane inevitable

The panel, of which Dr. David V. Ragone, Dean of the Thayer School of Engineering of Dartmouth College, was Chairman, pointed to some of the costs in higher gasoline prices and refinery equipment involved in production of unleaded gasoline, and also to the lower octane levels inevitable at this time in the process.

Other recommendations included the following:

—EPA should immediately declare its intention to require the general availability of at least one grade of unleaded, low-octane gasoline by July 1, 1974.

—Regulations should be designed to provide for nationwide availability of at least one grade of low-leaded fuel no later than the end of calendar year 1972.

—Federal tax or subsidy policies concerning automotive fuels should be modified to provide price incentives for the purchase of unleaded and low-leaded fuels. This could be accomplished by increasing the tax on leaded gasoline, by placing a tax on the lead additive, by reducing the tax on unleaded fuel, by direct subsidy, or by accelerated depreciation for refinery equipment to produce lead-free fuel. But the panel did not specifically recommend any one of these.

—If a decision is made to reduce or eliminate lead from high octane fuel, further tests should be started promptly to settle concerns about increasing aromatic content and its effect on exhaust photochemical reactivity. Higher aromatic content could have an effect on the quantity of carcinogenic elements in automotive exhaust.

—Future Federal emission regulations should take account of the costs required to meet them, especially fuel economy penalties associated with the use of emission control devices. Fuel economy losses which result from emission control systems, especially those for the oxides of nitrogen, are more serious than the economic effects of lead removal.

—Changes in future fuel octane requirements should be reported by automobile manufacturers to the regulatory agency at least two years in advance of production, and such information should be made public. Moreover, the regulatory agency should encourage car manufacturers to announce publicly at least a four-year moratorium on increases in engine octane requirements, starting in 1971.

—EPA should devote increased attention to the problem of increasing emission levels from vehicles as they accumulate mileage. Special attention should be given to developing quick and inexpensive methods for measuring emissions that could be incorporated into vehicle emission inspection programs.

—EPA should urgently consider increasing its efforts in the area of emissions from heavy duty vehicles, especially for nitrogen oxide emissions.

—EPA should investigate emission levels from motorcycles and off-road vehicles, and also gasoline-powered equipment such as outboard motors, lawnmowers, generators, and snowmobiles, and should consider regulating them.

Other proposals by the panel were: a study should be made of emissions from ground operations on aircraft; State and local agencies should be encouraged to regulate emissions from stationary diesel engines; and EPA should encourage State and local air pollution control agencies to regulate allowable hydrocarbon losses to the atmosphere during fuel handling operations, especially in high smog areas.

More than 90 percent

The panel did not recommend that EPA attempt to regulate fuel volatility or olefin content on a national basis, adding that regions with especially severe problems would doubtless consider regulating these aspects of fuel consumption locally. An olefin is an unsaturated hydrocarbon compound which enters into photochemical reactions in the atmosphere at a disproportionately high rate.

At the outset, the group made these points: the addition of lead alkyls is the least expensive way to increase the octane rating of motor fuel; higher octane fuels make it possible to build more powerful and efficient engines; it is impossible to remove all the lead from motor fuel immediately and still maintain present octane levels.

Other observations by the panel include the following:

—Estimates for the refinery equipment required to completely remove lead are between $2 billion and $10 billion in addition to that needed for normal replacement and increases in annual fuel volume, and would take many years to build.

—The economic burden of producing an unleaded gasoline of high octane will fall more heavily on the small refiners than on large refiners.

—Unleaded, 91 octane fuel will

cost most refiners more to produce than the present high-leaded, 94 octane "regular" gasoline, and probably will cost more at the pump.

—Costs for producing unleaded, low octane fuel should be small, not more than about one cent per gallon relative to current costs for producing leaded "regular" gasoline.

—But the cost increase to the consumer could well be overshadowed by costs resulting from a decrease in fuel economy. For example, a 10 percent loss in fuel economy is equivalent to a 10 percent rise in the cost of gasoline, which would mean $3 billion more a year for the American public. Moreover, this would result in a 10 percent rise in crude oil consumption in excess of a four percent normal increase attributable to rising car populations.

The panel recalled that automobile manufacturers had announced that more than 90 percent of the cars produced in the 1971 model year would be designed to run on 91 octane fuel. If this policy continues for the next few model years, the group said, by 1975 more than half the mileage will be by cars which are able to use 91 octane fuel.

Members of the panel, besides Dr. Ragone, were: John D. Baldeschwieler, Professor of Chemistry of Stanford University; James L. Dooley, Vice President of the Advanced Development Division of McCulloch Corporation, Los Angeles; Owen P. Hall, Jr., systems analyst, TRW, Inc., Redondo Beach, Calif.; Frederick J. Hooven, adjunct professor of engineering, The Thayer School, Dartmouth; Donald L. Katz, University Professor of Chemical Engineering, University of Michigan; Eric R. Morgan, President, Stainless and Strip Division, Jones and Laughlin Steel Corporation; and Ernest S. Starkman, professor of mechanical engineering, University of California. —*CTAB*

BRIGHTENING UP: *Sunlight glints from freshly seeded clouds over Lake Erie. Seeding encourages the formation of numerous ice crystals which reflect sunlight more readily than surrounding portions of the cloud.*

New Seeding Studies May Help Moderate Great Lakes Snowstorms

Snowstorms annually dump several feet of snow on the eastern and southern shores of Lakes Erie and Ontario during late fall and early winter. Often, up to three feet at a time falls when intensely cold air flows over the still unfrozen waters of the Great Lakes.

To better understand and to possibly modify these storms, two branches of Commerce's National Oceanic and Atmospheric Administration have conducted tests on the effectiveness of various artificial seeding agents in winter cloud systems: the Atmospheric Physics and Chemistry Laboratory (APCL), and the Research Flight Facility (RFF).

During experiments last season, the scientists used both silver iodide and dry ice as seeding agents. Dry ice was found more effective.

Airborne and ground observations in 1968-69 experiments have indicated that storm clouds consist of supercooled water—water below the freezing point which has not turned to ice. Ice crystals form in the colder cloud tops. As they fall through the cloud, they grow quickly by capturing and freezing the supercooled liquid droplets; this process, riming, produces heavily "rimed" snow pellets which fall rapidly out of the clouds and cause the deep snow accumulations.

Based on all winter seeding activities, it appears, according to APCL officials, that at warmer temperatures, lighter-weight snowflakes are produced, but these quickly mass with the heavier crystals. Therefore, a cloud's individual physical characteristics play an important part in redistributing precipitation.

NOAA studies show that riming can be prevented by artificially seeding clouds with enough nucleating agents to rapidly change all the supercooled droplets to small ice crystals. These smaller crystals would then fall more slowly and could be blown farther inland, decreasing the amount of snow on the shore and spreading the precipitation more thinly over a wider area.

Having determined the best seeding agents and rate, APCL scientists are now using data collected during the past winters in a mathematical study of cloud physics and the precipitation mechanics of this particular type of snowstorm.

The new studies will attempt to mathematically "model" the storms, their circulation patterns and rates of heat transfer. Developing these new models should provide more knowledge of air and moisture flows in storms, prediction techniques of different storm characteristics, and better methods of predicting the effects of seeding. *—NOAA*

Voluntary Product Standards

Voluntary Product Standards are developed by producers, distributors, users, and consumers with the cooperation of Commerce's National Bureau of Standards. These standards can cover products, packages, processes and materials and may include such things as terms, classes, sizes (including package sizes and body sizes), dimensions, capacities, quality levels, performance criteria, performance requirements, test procedures and installation procedures.

Since Voluntary Product Standards are completely voluntary, manufacturers can choose whether or not they want to follow a standard. But purchasers can require that a manufacturer follow a particular standard by including it in a legal document such as a sales contract or a purchase order. When a standard is made part of such a document, compliance with the standard is enforceable by the purchaser or the seller along with other provisions of the document.

A number of consumer products such as garden hose, clinical thermometers and plywood are marked as complying with Voluntary Product Standards. Consumers can look for references to these standards on products and product labels.

Any group, including consumer groups, can initiate a Voluntary Product Standard. Requests should be sent to the Office of Engineering Standards Services, National Bureau of Standards, Washington, D.C. 20234.

For the information of producers, distributors and users or consumers, Commerce Today *announces the availability of approved Voluntary Product Standards. Recently issued standards include:*

PS 30-70, School Chalk—Provides requirements for the dimensions, material, breaking strength, characteristics, toxicity, workmanship and chroma for standard types, classes and grades. Test methods for determining the material content, breaking strength and chroma are provided. Methods for identifying products conforming to the requirements of this standard are included. An appendix contains information on packaging. 15¢

PS 38-70, Steel Bi-fold Closet Door Units, Frames and Trim—Establishes requirements for dimensions, materials, and construction. Opening sizes and clearances are given for six foot eight inch and eight foot, two-panel and four-panel doors. 15¢

PS 39-70, Clinical Thermometers—Attempts to establish nationally-recognized classifications and performance requirements for thermometers which are used to measure body temperatures, including temperatures to be used for determining data of ovulation and basal metabolic rate. Includes requirements for bulb and stem glasses, temperature scale graduations, accuracy, ease of resetting, and reflection of temperature marks. 15¢

PS 41-70, Package Quantities of Instant Mashed Potatoes—Recognizes six package quantities based on servings. It also provides that a serving of reconstituted instant mashed potatoes be recognized as four ounces avoirdupois. Could help reduce the number of package quantities in the marketplace. 10¢

Copies of all voluntary product standards can be ordered from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (25 percent discount on orders of more than 100 copies going to the same address).

Private Salmon Venture Boosted

Salmon culture experiments by the Commerce Department's National Maritime Fisheries Service have proven so successful that a private firm has started to adapt and expand the system for possible commercial production.

With the aid of the first National Oceanic and Atmospheric Administration Sea Grant awarded solely to a private company, the firm of Ocean Systems, Inc., based in Reston, Va., will try to demonstrate the feasibility of a commercial-sized pilot operation to raise pan-size salmon from egg to market size in Puget Sound enclosures.

The project was initiated last November, because of the spawning cycle of the Pacific salmon and the need to optimize performance with summertime cultivation. Ocean Systems has already purchased and installed incubators and hatched approximately 670,000 coho salmon eggs, in addition to approximately 400,000 chinook salmon fry of a selected strain. Both are now in fresh water ponds.

In the latter part of May, the fry will be transferred to floating net pens in the open water of Puget Sound. There they will be fed a prepared fish food until they reach approximately one-half pound in weight, at which time they will be harvested.

This Sea Grant is unusual both because it is the first such grant awarded solely to a private firm, and because it was awarded by the NOAA administrative service office in Seattle rather than by the Office of Sea Grant. The Office of Sea Grant suggested that grant award and monitoring be undertaken by NOAA's field staff in Seattle.

The NOAA Sea Grant of $100,000 will be matched by the firm, which is investing an additional amount of nearly $160,000 in the project. *—NOAA*

Patents Of Special Interest

Recent patents issued by the U.S. Patent Office included:

Computer reel container. A container which has a base member, a cover member and a locking mechanism for releasably locking the members together. The container holds a reel of half-inch magnetic tapes and locks and unlocks in a one-hand push button operation. Patent No. 3,578,156 issued to Carl J. Norby, Boulder, Colo. and assigned to International Business Machines Corporation, Armonk, N.Y.

Apple picking apparatus. A stairwaylike platform for mechanically harvesting apples or other fruits. The staircase is mounted on wheels and adapted to be pulled by a tractor. It has retractable steps on either side and these steps are movable between a retracted position inside the staircase and an overhanging position when withdrawn laterally on either side. Patent No. 3,578,109 issued to Marcel Gagnon, Frelighsburg Co., Missisiquoi, Quebec, Canada.

Snow vehicle. A compact snow vehicle especially designed for children which also can accommodate adults. The components are in a compact arrangement, and feature a unique ski structure and a belt driving and supporting unit. Patent No. 3,578,095 issued to Hans Hauser, Fredericktown, Ohio, and assigned to the J. B. Foote Foundry Co., Fredericktown, Ohio.

Folding fire escape ladder. A folding fire escape ladder with an L-shaped first upright adapted to be secured vertically to the side of a building with an L-shaped second upright parallel to but reversely positioned with respect to the first upright. A number of rungs are connected to both uprights, each rung having parallel end portions and an offset intermediate portion, the rungs being pivotally connected at the end portions to the uprights by shoulder rivets with enlarged, flanged heads. Other shoulder rivets extend from the uprights and are positioned to engage the margins of the rung to serve as stops, the other rivets also having enlarged flanged heads adapted to engage one side of the rung as positioners. Patent No. 3,575,263 issued to Cheyenne A. Reinhard, 594 Beatrice St., San Leandroc, Calif.

Support for eye examination apparatus. Eye examination apparatus which includes a fixed base structure that has a circular track and a patient support chair positioned within the circular track. The generally cylindrical instrument support structure is supported for rotation on the circular track and has an aperture so that a patient may enter and the examiner may have direct access to the patient. An electrical motor drives the support structure on the circular track. Patent No. 3,572,913 issued to Donald R. Korb, Peter L. Lindenmuth, Boston, Mass., and Donald W. Horley, Arlington, Mass., and assigned to Boylston Research Associates, Boston, Mass.

Driver trainer. A driver trainer unit having a head unit including a blinder operable between raised and lowered positions, a speaker operative with the blinder and actuated by a computer responsive to the driving actions of the student operator. A solenoid may be used to move the blinder between the raised and lowered positions. A microphone may also be provided for receiving the audible responses from the student when reacting to a simulated crash situation. Patent No. 3,577,857 issued to Donald H. Schuster, and Russ S. Vaught, Ames, Iowa, and assigned to Iowa State University Research Foundation.

Construction for electronic oven appliances. An electronic microwave oven having a unitary cast door frame to which rearwardly extending channel members are attached for the support of a component tray. The component tray forms the oven roof and supports relatively heavy electronic oven components required for the generation of microwave energy. The channel sections are hollowed to permit insertion of the user's fingers for lifting, and the hollows extend to the rear of the oven unit to allow the unit to be received by a pair of horizontal parallel support bars in a built-in wall installation. Patent No. 3,576,417 issued to Egbert M. Tingley, Kankakee, Ill., and assigned to Roper Corporation, Kankakee, Ill.

Abstracts and drawings of patents are published as they are issued in the *Patent Official Gazette* each Tuesday. More than 1,800 patents are issued each week. Trademarks are published in the *Trademark Official Gazette*. Copies of the *Patent Official Gazette* and the *Trademark Official Gazette* may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

Science Calendar

June 16-18 — Gaithersburg, Md. — National Bureau of Standards, Summer Symposium in Analytical Chemistry. Cosponsor: American Chemical Society.

June 21-24 — Washington, D.C. — Fifth Symposium on Temperature, Its Measurement and Control in Science and Industry, Sheraton Park Hotel. Sponsors: American Institute of Physics, the Instrument Society of America, and the National Bureau of Standards.

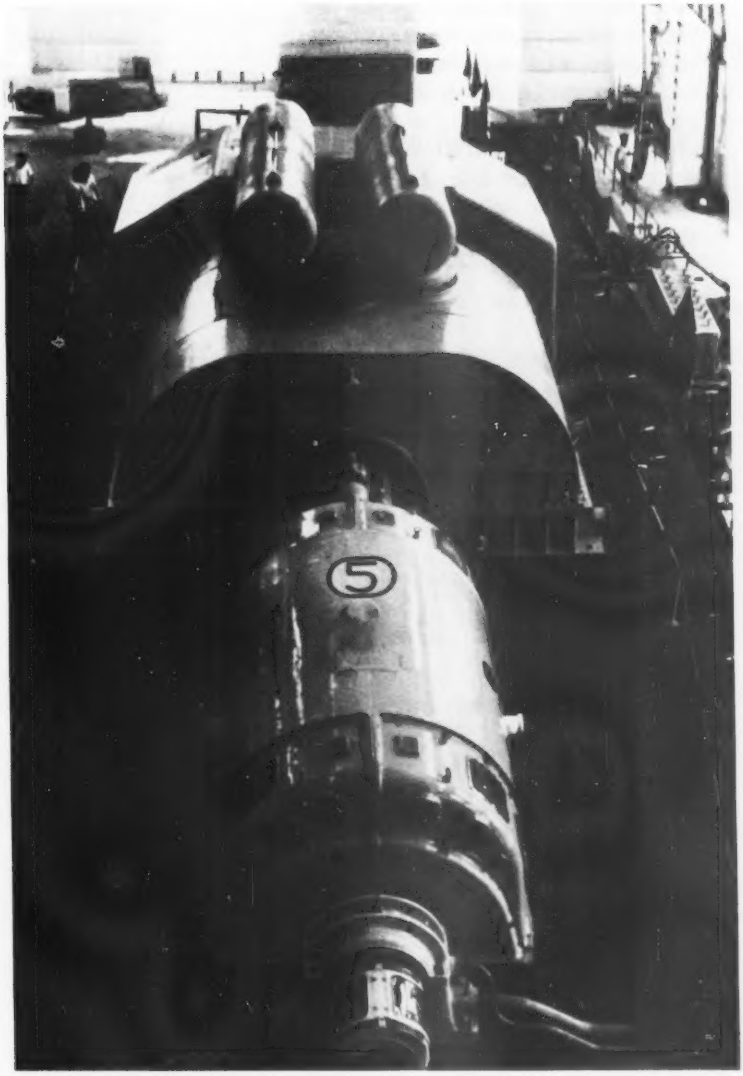
July 12-16 — Washington, D.C. — 56th National Conference on Weights and Measures. Sponsored by the National Bureau of Standards. Shoreham Hotel.

June 14, 1971

International Commerce

- Official actions affecting trade listed
- Stans forms new advisory trade committee
- Oil find spurs already robust Congo
- Growing competition seen in Korea
- Upcoming U.S. overseas promotions

Mainland China Trade Methods Detailed



Newsmemo

Some signposts along the way to greater U.S. foreign commercial activity, as pointed out recently by Commerce Department officials:

Secretary Stans: "The Department of Commerce recently completed a study which shows that in the year 1970 there were some 200 actions by foreign governments that were contrary to the interests of American business in their countries, mostly in the field of investment. Certainly this is not conducive to a healthy economic atmosphere throughout the world. Capital will go where it is welcome, where it is secure, and where there is the least danger - the least restraint - on investments and earnings."

Robert McLellan, Assistant Secretary for Domestic and International Business: "While it is often said that the United States is not really a trading nation because only 4% of our GNP is in exports, this is not truly accurate. We still supply 18% of the world market (down 3 points in the past decade but still the largest individual country share of market). In 1970, U.S. exports will exceed $45 billion. The sales of our overseas subsidiaries and affiliates, although not precisely known, in all probability will exceed $150 billion annually. So, preoccupied as we may be by the rapid trade growth of the Common Market and Japan, let us not underestimate our own strength."

Harold B. Scott, Director of the Bureau of International Commerce: "Now seems an appropriate time to suggest a basic reappraisal of the priority we give to U.S. foreign economic policy in relation to its traditionally secondary role to political and security matters. A long range, coherent, foreign economic policy which integrates trade, investment, monetary, and geographic interests could well be the single most important U.S. contribution to world stability in the next two decades."

Marinus Van Gessel, Deputy Director, Bureau of International Commerce: "Each additional billion dollars of exports supports over 70,000 additional jobs; and tends to concentrate them in the most productive industries. Export growth transfers capital and labor to the areas of highest output, accelerating the overall economic growth and efficiency of the nation."

William D. Lee, Deputy Assistant Secretary of Commerce: "It is imperative that the Federal Government create the environment in which American firms can match their business genius against that of other nations on a fair and equitable basis. This could be done by enacting legislation which would give U.S. firms access to export aids similar to those available to their overseas competitors. In other words--to ensure that expanding market opportunities are available to all firms on an equal basis."

International Trade Winds

INSTITUTIONAL SUPPLIES — ACCO International of Chicago has begun producing its office and school supplies in Jamaica. The subsidiary, ACCO Jamaica Ltd., will produce a full line of binders, pad-holders and photo albums for the entire Caribbean market. The Jamaica Industrial Development Corp. is building a new plant in the outskirts of Kingston to replace the firm's temporary quarters. ACCO joins nearly 200 other companies already operating in Jamaica under its Industrial Incentive Laws.

ELECTRONICS — GTE International has licensed Chantapha Indistries Co., of Bangkok, to assemble and distribute Sylvania home entertainment products in Thailand. The agreement covers black and white television sets and transistor radios. Components used in their assembly will be supplied by Sylvania Far East Ltd., of Hong Kong, and GTE International subsidiary. Founded in 1961, Chantapha was the first manufacturer of transistor radios in Thailand.

RADAR—ITT Gilfillan Inc., a subsidiary of International Telephone and Telegraph, will supply three "Quadradar" air traffic control radar systems valued at $746,000 to Greece. The order includes two modification kits to adapt existing Greek Quadradars for IFF (Identification friend or foe), and three sets of spares for maintenance and field support. Quadradars are already in use in the Arctic and Antarctic, Europe, Middle East and Southeast Asia.

NATURAL GAS—Chemical Construction Corp., New York, has signed a $300 million contract with SONATRACH, the Algerian national oil and gas company, for the engineering and construction of a liquefied natural gas complex with a design capacity of one billion cubic feet per day. The plant will be built at the port of Arzew, Algeria. Construction is scheduled to begin in 1972 and take about four years. Output from the plant will be transported in nine specially designed tankers to regasification facilities on the east coast of the United States.

Procedures In Trading With Mainland Chinese Detailed

International trade specialists in the Commerce Department have assembled the material for the article below from published descriptions of experiences in trading with the People's Republic of China by free world businessmen. An article reviewing the extent and makeup of Free World—Mainland China trade during the 1960s was published in the May 3 issue, which also contained a list of the addresses of the China foreign trade corporations.

The People's Republic of China (PRC) comprises an area of 3.8 million square miles (slightly larger than the United States), has an estimated population of 750-800 million and a gross national product estimated at $80-$100 billion in 1970. About 80 percent of its labor force is employed in farming.

China's strategy for industrialization emphasizes modernizing agriculture and those manufacturing industries most directly related to processing agricultural raw materials. Investment is otherwise directed mainly toward consolidating and strengthening its present industrial position and developing its scientific and technical resources.

A policy of economic self-sufficiency predisposes China to rely on its own resources and industrial capability to the extent possible. That virtually every item available to consumers is domestically produced, severely limits the prospect of selling consumer goods there. Central planning is used to focus the nation's energy toward rapid economic development. This indicates a potential for exporting capital goods to China that will expand over the next decades, with an emphasis on agricultural machinery, complete plants (especially for producing chemicals), machinery and equipment for the steel, mining, transport, construction and petroleum industries, and industrial raw materials.

Foreign trade is a state monopoly, controlled by the Ministry of Foreign Trade. It is conducted exclusively through a network of corporations in accordance with priorities established considerably in advance through the country's economic plan. The foreign trade corporations are organized according to the commodities or services for which they are responsible (see *Commerce Today*, May 3, Page 37) and have main offices in Peking with branch offices in various industrial centers.

Development of foreign trade and economic relations with most nations of the world is an important part of the present PRC's policy to maximize the potential contribution of foreign trade to its economic development. China now has trading relations with some 100 countries.

A desire to finance its imports with export earnings has resulted in an effort to balance its trade with the rest of the world. In contrast to the practices of other centrally planned economies, however, China trades on a multilateral basis and does not insist on balancing its trade with individual countries. It seeks to avoid complete dependence on any one nation as a source of supply by spreading its import orders among several nations. Furthermore, Chinese trade has at times been channelled to particular countries for strictly political reasons.

PHOTO ON PAGE 31—Despite successful technical achievements, such as this 125,000 KW steam turbo-generator that was domestically designed and manufactured by the Mainland Chinese, fulfillment of China's desire for industrialization will increasingly require capital imports from the Free World.

Eighty percent of China's $4.3 billion trade in 1970 (imports, $2 billion; exports, $2.3 billion) was with free-world countries, with whom it has maintained an estimated annual balance-of-trade surplus of $100-$250 million for the past 20 years. These surpluses stem principally from its trade with Hong Kong and Singapore. Details of China's import plans are not available; however, a study of China's imports from free world countries can reveal trends and patterns (see *Commerce Today*, May 3, pp. 4-9).

Establishing contact

Most American businessmen appear to view the growing Mainland China market in terms of its potential rather than its present capacity to generate exports or absorb imports. Most businessmen also are aware that it takes time, patience, and experience to do business successfully with the Chinese.

The first step in establishing business contacts with the People's Republic of China is to select the appropriate foreign trade corporation. It is best initially to contact the main office in Peking, although responsibility for the import or export of particular commodities is often delegated to various branch offices, and negotiations may ultimately be with one of them. Normally all negotiations are handled by the appropriate foreign trade officials; contact with end-users is rare. PRC trade missions in foreign countries have been known to take the initiative in contacting Western firms when the Chinese had a strong interest in their products.

The initial proposal submitted to

the appropriate foreign trade corporation in Peking should be sufficiently detailed and comprehensive to allow the Chinese to evaluate it commercially. It is not recommended that this proposal include price quotations. However, full information about the firm, its activities, and its products is essential. Mention of a willingness to provide further details, answer any questions, and arrange personal follow-up meetings is recommended.

Correspondence may be in English, since all foreign trade corporations are prepared to negotiate in English. Quantities, where appropriate, should be expressed in metric terms. It is recommended that at least 10 (preferably 20) copies of the proposal and accompanying literature be sent so that the information can be distributed to potential end-users.

If the Chinese are interested in a proposal, they can be expected to reply. It often takes considerable time for a proposal to be processed and assessed. Sometimes a reply will include an invitation to meet, request additional information, or say that there is no import requirement at the present for the goods in question. On occasion there may be no reply at all.

Firms that are convinced their products offer the Chinese profitable opportunities should keep their products and literature before the appropriate foreign trade officials. In general, it is advisable to follow up periodically the initial proposal with additional material and samples, especially with regard to any developments that would enhance the initial approach. Any additional literature or samples should be accompanied by a covering letter that refers to the original proposal. U.S. postal rates on mail to the People's Republic of China are 25¢ per half-ounce for air mail and 13¢ per half-ounce for surface mail. Printed matter costs 6¢ for the first 2 ounces and 4¢ for each additional ounce.

Exporters may send samples to China only after receiving permission in advance from the relevant foreign trade corporation. They should arrange to send their samples via the state trading corporation's principal Hong Kong agent: China Resources Company, Bank of China Building, Hong Kong, BCC, or via the China Travel Service (H.K.), Ltd., 6 Queen's Road, Central, Hong Kong, BCC.

Although the foreign trade corporations in Peking prefer to deal directly with foreign firms, an alternative method of eliciting Chinese interest is to visit the China Resources Company in Hong Kong. This company represents PRC interests in Hong Kong and Southeast Asia and acts as an agent for all of China's foreign trade corporations. The agents can explain the current situation and usually report fully to their principals in Peking. In rare instances they are allowed to conclude trade deals.

U.S. Policy

The U.S. Government is striving to improve its commercial and other practical relations with the People's Republic of China.

In accordance with this policy, the President announced on April 14 that he would lift the U.S. embargo on direct trade with China. At the President's request the following measures have been taken relative to trade, transportation, and finance:

1. Controls on the use of dollars in current transactions have been relaxed;

2. Fueling by U.S. firms of Chinese cargo carriers, except those bound to or from North Viet-Nam, North Korea, or Cuba, is now permitted;

3. Controls on carrying Chinese cargoes have been relaxed and U.S. owned foreign-flag carriers are now permitted to visit Mainland China ports;

4. Lists of goods permitted in trade with the People's Republic of China have been prepared (with a scheduled June 10 White House release announcement).

Negotiating

Before entering into negotiations, U.S. firms should have assured themselves that a license to export the goods they propose to sell the Chinese will be granted (see item on export control procedures on Page 35).

Once an interest is expressed and negotiations begin, communication becomes much easier. The initial response to a proposal is typically a request for more specific information, such as price quotations. Prices should be quoted f.o.b. at one of the major west coast ports and c.i.f. Shanghai. This might be followed by a request to come directly to Peking for further discussion or an invitation to the semiannual Canton Fair, where a considerable amount of foreign trade is transacted.

Invitations are issued only to those in whom the Chinese have a genuine business interest. The Chinese provide interpreters and the talks are conducted in English. Negotiations are thorough and protracted and emphasize rigorous detail. Preparation is a must—the businessman should have copies of all previous correspondence and expect to confront very astute bargaining.

Competition among Western businessmen is keen and the Chinese may be expected to exploit this situation and extract the best possible terms. For example, the state trading corporation may immediately demand a discount but will not accept service under a guarantee clause. This clearly must be considered when deciding how far one can go in acceding to their demands. The Chinese have never been known to give a discount for large orders or pay a premium for prompt delivery. Indeed the Chinese apparently have never agreed to a sale on anything but their own terms.

The language of the contract should be carefully chosen in order to preclude any misunderstandings. For example, businessmen should refrain from making statements, such as "we would be able to provide," that could be construed as "we will provide." All aspects of the agreement should be incorporated into the contract, for the Chinese will require strict adherence to its terms.

Those firms that have successfully concluded business transactions almost invariably place great importance on their trade with Mainland China and are very knowledgeable about Chinese business practices. Some businessmen are discouraged by attempts to sell goods clearly inappropriate in the PRC market; others are discouraged by the amount of time, correspondence and large quantities of documented information required. Success requires patience, persistence, experience, and a sensitivity to and respect for Chinese customs and temperament. Trading with the Chinese may take considerable time and appear trying by Western business standards, but Chinese purchases are often large when they come.

Chinese businessmen traditionally place great emphasis on etiquette, and a Western businessman is well advised to conduct himself with quiet dignity and reserve. Experienced Western businessmen report that negotiations are usually preceded and followed by tea and sometimes by a short lecture on communist ideology. During non-business hours, Western businessmen are often invited to attend various cultural activities, also usually laden with political messages. U.S. businessmen must be aware that at some time during their stay in China they may have to listen to an exposition of the PRC's political views. Tipping is unheard of and receipts are often given, even for trivial sums like taxi fares; these should be politely accepted. Gifts may be presented to official bodies, such as a trade unit, but never to individuals.

The list of commodities which can be exported to the People's Republic of China under general license, that is, without specific approval from the Department of Commerce, is being published in Export Control Bulletin 46, which is sent to all holders of the current edition of the Export Control Regulations. Copies of this Export Control Bulletin are available for 40 cents from any U.S. Department of Commerce Field Office; or by mail from the Department of Commerce, Sales and Distribution Branch, Room 2119, Washington, D.C. 20230, or in person from the NTIS Sales Desk, Room 1043. It will generally be helpful to use in conjunction with this published list the Commodity Control List found in the Department of Commerce Export Control Regulations which may be consulted at any Department of Commerce Field Office.

Payment and claims

The majority of contracts are negotiated in Western currencies, but an increasing number are being negotiated in renminbi (RMB 2.46=$1). The Chinese typically require an irrevocable letter of credit with payment in a Western currency, usually Swiss francs or pounds Sterling. However, contrary to the accepted international practice, they may refuse to have the letter of credit confirmed with a bank in the seller's country. At the same time, the Chinese have a well established reputation for paying promptly and in full.

The question of claims is negotiable and the relevant provisions are usually incorporated into the contract. Inspection of imported goods is thorough and claims for compensation or cost of repair may be levied. Penalty clauses for delays in delivery will be enforced. The Chinese seldom agree to third country arbitration. Although, the PRC has its own arbitration tribunal, it reportedly resists efforts to settle claims by arbitration. The Chinese are reported to be fair with claims, though, and invariably to produce fully documented evidence to support their claims. However, their record for meeting delivery schedules for Western firms has been spotty at times, and the settlement of claims can be involved and time-consuming.

Services

The People's Republic has agencies to handle the various services related to foreign trade, such as shipping, insurance and banking. Matters relating to shipping are handled by the Sinofracht National Chartering Corporation. The Chinese have an extensive fleet of charter vessels and in many cases insist on arranging their own shipping. Insurance is handled by the People's Insurance Company of China. The entire spectrum of banking services is provided by the Bank of China which has offices throughout Mainland China and in many large cities throughout the world, for instance Hong Kong, Tokyo, and London. It also maintains correspondence relationships with several Western banks. Chinese service agencies generally are well versed in Western business methods and are prepared to provide services in accordance with usual commercial practice.

At present, the Commerce Department has no information regarding PRC import controls and documentation requirements. Firms are advised to inquire about such matters during business discussions and to incorporate their understanding of these requirements into trade contracts.

The Chinese Export Commodities Fair, as it is officially called, is China's most important international business event. It is held semiannually (Apr. 15-May 15 and Oct. 15-Nov. 15) in Kwangchow, known in the West as Canton, and is the major opportunity for Western businessmen to acquaint themselves with the range, quantity, and quality of Mainland China's exports as well as the country's import requirements. The Chinese negotiate between 30 and 50 percent of their total trade during these fairs, and most businessmen trading with China make a point of attending; 4,500 businessmen, representing the major industrial and commercial firms of over 60 countries, reportedly attended the spring Fair in 1971.

By invitation only

Only businessmen or firms specifically invited by an official PRC agency may attend the fair. Only those firms are invited with whom the Chinese already have well-established relations or with whom they have a strong desire to conclude business. Businessmen who wish to attend the fair should request an invitation from the appropriate foreign trade corporation in the normal course of correspondence. It also may be possible to obtain an invitation to the fair even without prior contact with the Chinese by writing to the Chinese Export Commodities Fair, Pearl River Square, Kwangchow, People's Republic of China. A few Western businessmen represented U.S.-owned foreign firms at the 1971 spring Canton Fair, but no U.S. citizens or businessmen are known to have attended.

Specialized exhibits by a group of private firms is another medium that has been used effectively by Western firms to sell products to the Chinese.

Traveling to China

The U.S. Government does not permit U.S. flag carriers to travel to the People's Republic of China. At present, only two non-communist airlines fly routes to Mainland China—Air France and Pakistan International Airways. In addition, the Soviet airline, Aeroflot, also flies to Peking from Moscow.

Businessmen traveling to the Chinese People's Republic most frequently go to Hong Kong first, as it is easily reached by sea and air. They then make the trip to Canton or Peking on a modern, air-conditioned train. U.S. businessmen may wish to inform the nearest U.S. Embassy or Consulate of their intended trip prior to entering China.

Visas, diplomatic relations

On March 15, the Department of State announced that U.S. citizens are no longer restricted from traveling to the People's Republic of China. One may have the restriction deleted from his passport upon request at any Passport Agency in the United States or at any U.S. Embassy or Consulate abroad.

Entry and exist visas are required for visiting the People's Republic of China. To apply for a visa write to an Embassy of the People's Republic of China. The closest one is in Ottawa, and the address is Juliana Apartments, 12th Floor, 100 Bronson Avenue, Ottawa 4, Ontario, Canada. Application for a visa can also be made to the China Travel Service (H.K.), Ltd., Yu To Sang Building, Queen's Road, Central, Hong Kong, BCC—an official agency of the People's Republic of China that has arranged for the travel of various foreigners to China. While visa applications from Americans are being accepted by PRC embassies and the China Travel Service in Hong Kong, only a few visas have been granted to U.S. citizens.

The United States does not have diplomatic relations with the People's Republic of China. There are no U.S. diplomatic or consular officials there with the practical result that U.S. interests are not represented in the PRC. Thus the commercial and other services normally available to American citizens traveling abroad cannot be provided.

Several non-communist countries have embassies in Peking, but there are no Western consulates.

Information on the trade and economy of Mainland China is available from the Office of International Commercial Relations, BIC-898, U.S. Department of Commerce, Washington, D.C. 20230.

The Office of Foreign Assets Control, Department of the Treasury, Washington, D.C. 20220 is responsible for matters pertaining to the import of goods into the United States from the People's Republic of China.

Reports Review Exports By States

Individual state reports in the State Export Origin Series have now been updated to include data for the year 1969.

Each of the 50 reports carries an analysis of 1969 data on manufactured exports developed from a special Census survey of manufacturing establishments exporting at least $25,000 annually. Changes since the prior 1966 data and for the decade of the sixties are stressed. The data presented on commodities are keyed to the two-digit level of the Standard Industrial Classification (SIC). In addition to state totals, the reports indicate the contribution of "standard metropolitan statistical areas" and of port facilities to exports.

Copies are available from Sales and Distribution Branch, U.S. Department of Commerce, Washington, D.C. 20230, and from Commerce Department Field Offices.

Congressional Hearings Highlight May Trade Moves

This article is another in a series of monthly reports outlining actions by domestic, foreign, or international agencies affecting world trade, as compiled by the Legislation and Tariff Analysis Division of the Bureau of International Commerce's Office of International Trade Policy.

CONGRESS

Congressional action on trade and related matters was highlighted in May by public hearings held May 17-21 before the recently formed Subcommittee on International Trade of the Senate Finance Committee. Testifying at the hearings were five Administration witnesses including Secretary of Commerce Maurice H. Stans, former government officials and prominent businessmen.

In his testimony, Secretary Stans noted that, while inflation has contributed to lower U.S. trade surpluses in recent years, adverse structural shift in trade patterns, especially in the area of goods that do not involve high technology, was a more significant factor. Secretary Stans also discussed the Commerce Department's efforts to boost U.S. exports and noted that passage of legislation relating to the Domestic International Sales Corp. (DISC) and Eximbank financing would help create an improved export environment. With regard to trade with Eastern Europe, Secretary Stans expressed the view that while there are a number of impediments to trade, progress has been made in the liberalization of U.S. export controls. In addition, the Secretary stressed the need for better methods of handling adjustment assistance to firms and workers injured by imports. Responding to questions from the Committee, Secretary Stans stated that the U.S. must be more aggressive in pursuing its own interests in the trade field and that the President's reorganization plan will improve coordination of foreign trade policy.

Other Congressional Hearings: On May 20-21, the Environmental Subcommittee of the Senate Commerce Committee held hearings (originally scheduled for April 29-30) on fish inspection legislation, including S. 296, S. 700, and S. 1528. These bills would authorize establishment of standards and inspection of domestic and imported fish and fish products.

On May 24, the Subcommittee on Fisheries and Wildlife Conservation of the House Merchant Marine and Fisheries Committee held a public hearing on H.R. 3304 and related bills to conserve and protect Atlantic salmon of North American origin. One provision of H.R. 3304 would prohibit the importation of fish products of any country whose fishing operations are detrimental to the conservation of Atlantic salmon.

During May the General Subcommittee on Labor of the House Education and Labor completed hearings on H.R. 7130, which establishes procedures to provide relief to domestic industries and workers injured by imports from low-wage areas, and establishes restrictions on government procurement from foreign suppliers having labor standards significantly less favorable than the U.S.

Other Committee Action: During May the House Committee on Agriculture held executive sessions on extension of the Sugar Act. Also, the Committee, on May 26, reported H.R. 1161, removing certain restrictions on the export of domestic wines.

The House Ways and Means Committee, meeting in executive session on May 18, ordered several tariff bills reported: H.R. 1680, extending for an additional temporary period the existing duty suspension for certain classifications of yarns of silk; H.R. 4590, establishing a permanent duty suspension for aluminum hydroxide and oxide, calcined bauxite and bauxite ore; H.R. 7767, continuing until June 30, 1973, the existing duty suspension for metal scrap; and H.R. 8312, continuing for two additional years the duty-free status of certain gifts by members of the Armed Forces serving in combat zones. The Committee also ordered H.R. 8293 reported, continuing until Sept. 30, 1973 the International Coffee Agreement Act of 1968.

Floor Action: Following Senate passage of S.860, relating to the Trust Territory of the Pacific (Micronesia) and containing provisions to extend to Micronesia duty-free treatment now applicable to the U.S.'s insular possessions (see *Commerce Today*, May 3, p. 39), the House passed a resolution introduced by Ways and Means Chairman Wilbur Mills returning the bill to the Senate. The House returned the Senate-passed bill because the tariff provisions infringed upon the House's constitutional rights and privileges concerning the initiation of revenue matters. The Senate subsequently re-passed S. 860 without the tariff provisions and cleared the bill for the House.

Trade Legislation: Through May 31, approximately 235 trade and related bills were introduced in the 92nd Congress. About 69 were import quota bills for specific products or product groups and 7 were general orderly marketing bills, applicable when imports surpass stated levels of domestic consumption. Quota bills not previously reported in this column were introduced during May for anti-friction ball and roller bearings (H.R. 8702 and S. 1778).

Other new legislation would amend the U.S. tariff laws by: suspending the duty on certain aircraft components (H.R. 7652); continuing until June 30, 1973, the existing duty suspension for metal scrap (H.R. 7767); and continuing for two additional years the duty-free status of certain gifts by members of the Armed Services in combat zones (H.R. 8312). Other new trade-related bills would: add papayas to the fruits and vegetables covered by section 8e of the Agricultural Marketing Agreement Act (H.R. 7661); amend the Clayton Act to prohibit sales below cost for the purpose of destroying competition or eliminating a competitor (H.R. 8087); amend and extend the coverage of the Endangered Species Conservation Act of 1969 (H.R. 8099); foster fuller U.S. participation in international trade by promotion and support of representation of U.S. interests in international voluntary standards activities (H.R. 8111 and S. 1798); amend the Eximbank Act to provide additional funds for export credit (H.R. 8181); continue until Sept. 30, 1973, the International Coffee Agreement Act (H.R. 8293); amend the Tariff Act of 1930 with respect to customs brokers (H.R. 8350); amend the Food Stamp Act to allow eligible households to purchase certain imported foods with food stamps (H.R. 8460); require U.S. import statistics to be reported on a c.i.f. basis (S. 1815); and permit importation of fuel for residential heating in the Northeastern U.S. without regard to import quotas (S. 1816).

THE PRESIDENT

Adjustment Assistance Rulings: The President has accepted the determination of the two Commissioners finding import injury and has authorized one firm and five worker groups to apply to the Secretaries of Commerce and Labor, respectively, for adjustment assistance certification. By exercising his tie-breaking authority, the President resolved evenly-divided votes of the Tariff Commission for investigations involving the Louis Shoe Co. of Amesbury, Mass. and workers at the following plants: RCA Corp., Memphis, Tenn. (television receivers); Ornsteen Shoe Co., Inc., Haverhill, Mass. (leather shoes); Kleven Shoe Sales Co., Inc., North Brookfield, Mass. (leather shoes); Sinclair Shoe Co., Haverhill, Mass. (leather shoes); and Emerson Television and Radio Co., Jersey City, N.J. (television receivers).

TARIFF COMMISSION

Adjustment Assistance—Firms: During May the Tariff Commission reported to the President its findings for two investigations initiated on behalf of firms alleging injury due to imports. The Commission unanimously found that the Royal Silver Mfg. Co., Inc. of Norfolk, Va., a manufacturer of stainless-steel flatware, is eligible to apply for adjustment assistance, but ruled by a majority vote (Moore dissenting; Clubb and Young not participating) that Sprague Electric Co. of North Adams, Mass., a manufacturer of capacitors and semiconductors, did not meet the eligibility criteria for adjustment assistance relief.

Adjustment Assistance—Workers: In its reports for eight investigations on behalf of worker groups alleging import injury, the Commission found all groups ineligible to apply for adjustment assistance. Those workers involved in the negative determinations were: 1,200 workers at RCA's Cincinnati Plant (receiving tubes and transistors) and approximately 1,600 workers at seven Sprague Electric Co. plants located in Massachusetts, Virginia, North Carolina, New Hampshire, Vermont and Wisconsin.

In addition, the Commission has opened new investigations to determine the effect of imports on six petitioning groups of workers. Five of the investigations concern footwear workers at five separately-owned plants in New York, Massachusetts and Maine; and the other concerns pipe organ workers of M. P. Moller, Hagerstown, Md.

Dumping Cases: On May 3 the Commission reported unanimously (Clubb not participating) that a domestic industry is not being injured as the result of sales in the U.S. of brass key blanks from Canada at prices below those in the exporter's home market. As a result of the decision, dumping duties will not be imposed. The case was previously referred to the Commission on March 3 by Treasury following a finding of less-than-fair-value sales.

Also, the Commission initiated during May an investigation concerning tempered sheet glass from Japan referred to the Commission earlier this month by Treasury (see below). A hearing is scheduled for June 22.

Section 337 (Unfair Import Competition) — Lightweight Luggage: The Commission, completing its preliminary investigation concerning alleged patent infringement by at least three importers of lightweight luggage, ordered a full investigation and recommended by a majority vote (Leonard and Moore dissenting) that the President issue a temporary exclusion order. A hearing in connection with the full investigation of the alleged unfair methods of competition and unfair acts in the importation of lightweight luggage is scheduled for June 21.

Section 337 (Unfair Import Competition) — Plastic Sheets and Meprobamate: On May 18, the Commission held a public hearing as part of the full investigation of unfair methods of competition and unfair acts (infringement of a process patent) in the importation and sale of certain articles comprised of plastic sheets having an openwork structure (see *Commerce Today*, April 5, p. 38). Only the counsel and President of Kage

Co., Inc. (one of the three complainants) testified. Neither the importers nor the foreign supplier appeared. The hearing is scheduled to resume June 28.

In connection with the Commission's full investigation of alleged patent infringement by importers of meprobamate, a public hearing is scheduled for June 29.

Section 332 Investigations: At the request of the recently-formed Subcommittee on International Trade of the Senate Finance Committee, the Commission has instituted four new studies: (1) the implications of multinational firms on world trade and investment and on U.S. trade and labor; (2) the nature and extent of tariff concessions granted in U.S. trade agreements; (3) customs valuation procedures of the U.S. and foreign countries; and (4) tariffs and nontariff barriers among principal trading nations. Written statements are welcomed by the Secretary of the Tariff Commission, Washington, D.C. 20436.

Broom Consumption: The Tariff Commission has reported to the President that domestic consumption of whiskbrooms of broom corn totaled 445,501 dozen in 1970, while consumption of other broom corn brooms amounted to 2,922,524 dozen. These annual reports, required by law, provide the data necessary for the President to determine if domestic consumption of these brooms has changed substantially since 1965. If so, he must proclaim changes in the applicable tariff-quotas.

OTHER AGENCIES

Treasury—Dumping Cases: On May 17 Treasury issued dumping findings with respect to clear sheet glass from Japan, clear plate and float glass from Japan, and ceramic wall tile from the U.K. The finding of dumping is an administrative requirement preceding the application of anti-dumping duties and following findings of less-than-fair-value sales (see *Commerce Today*, Feb. 8, p. 43) and injury to a U.S. industry (see May 3 issue, p. 40).

Two final decisions concerning alleged dumping of imports in the U.S. market have also been announced by Treasury. The first was a finding of less-than-fair-value sales for tempered sheet glass from Japan and referral of the case to the Tariff Commission. Appraisal has been withheld on such imports since Feb. 4. The second was a final determination of no sales at less than fair value for cast or rolled glass from Japan. A similar preliminary notice, issued Jan. 29 (see *Commerce Today*, March 8, p. 38), indicated that prices in the exporter's home market were lower than in the U.S.

In addition, Treasury has announced that there are reasonable grounds to believe or suspect that the prices of Italian, French and West German sheet glass sold for exportation to the U.S. are less than the prices for home consumption and has ordered withholding of appraisement on such imports as of May 4.

Treasury has also issued a notice of intent to discontinue the antidumping investigation of high voltage porcelain insulators from Japan. The action was based on formal assurances from the foreign manufacturer that no further sales will be made at prices below those received for the product in Japan.

Following summary investigations, Treasury announced the opening of six new inquiries to verify information with respect to alleged dumping of: pentaerythritol from Italy, pentaerythritol from Japan, vinyl asbestos floor tile from Canada, hand pallet trucks from France, wool and polyester/wool worsted fabrics from Japan, and drycleaning equipment from West Germany.

Treasury — Antidumping Regulations: Treasury announced on April 26 proposed rulemaking which would allow the Treasury to make fair value determinations based on home market prices regardless of whether the quantity of goods sold for home consumption is less than 25% of the total quantity sold for purposes other than exportation to the U.S. Elimination of the 25% requirement will allow Treasury to determine fair value on the basis of prices in the exporters' home market in cases in which Treasury presently must use the price of merchandise sold by the manufacturer to third countries.

Treasury—Countervailing Duties (Barley and Molasses): Treasury announced on May 5 that countervailing duties will be imposed on imports of barley and molasses from France. The duties, which will become effective June 19, are the result of investigations by the Customs Bureau pursuant to section 303 of the Tariff Act of 1930. The duties will be assessed only on shipments receiving government subsidies and will equal the amount of the subsidies.

Court of Customs and Patent Appeals — Countervailing Duties (Litharge): The CCPA has overturned a Nov. 5, 1969, ruling (see *Int'l Commerce*, Feb. 16, 1970, p. 10) by the U.S. Customs Court which ordered that countervailing duties be assessed on U.S. imports of litharge from Mexico to offset an indirect subsidy granted by the Mexican Government. In effect, the CCPA reversed the Customs Court on the grounds that the Customs Court lacked jurisdiction to entertain an appeal by an American manufacturer in an area where the congressional intent was to rely on executive discretion. The Court further ruled that the Congress did not intend the courts to impose a countervailing duty in the absence of positive action by Treasury.

Customs — Tunafish Tariff-Quota: As required by law, Customs has announced that 77,296,137 pounds of tuna may be imported during 1971 at a rate of 7% ad valorem under TSUS item 112.30.

Tuna imported in excess of the quota will be dutiable at 15% ad valorem (*Fed. Reg.*, April 28).

OEP—National Security Investigation (Ballbearings): The Director of the Office of Emergency Preparedness reported on May 5 that imports of certain miniature and instrument ball bearings are not entering the U.S. in such quantities or under such circumstances as to threaten to impair the national security. The determination followed a two-year investigation under authority of section 232 of the Trade Expansion Act and resulted from an application filed Jan. 31, 1969, by the Anti-friction Bearing Manufacturers Assn., Inc., of New York, on behalf of domestic producers of miniature and instrument precision ballbearings. Thus, no recommendation to limit imports was necessary.

Commerce—Adjustment Assistance: The Commerce Department announced on May 27 that Louis Shoe Co. of Amesbury, Massachusetts, has been certified eligible to apply for adjustment assistance. Application by the shoe firm followed an evenly-divided Tariff Commission report and a Presidential decision to accept the determination of those Commissioners who found import injury. The firm, the eleventh designated by Commerce to qualify for assistance under the import injury criteria of the Trade Expansion Act, must now submit to Commerce an adjustment assistance proposal designed to materially contribute to the firm's economic development and meet other legal criteria.

Labor—Adjustment Assistance: Eight worker groups have been certified by the Labor Department as eligible to apply for adjustment assistance. Of the more than 1,700 workers certified, approximately 1,350 are unemployed or underemployed shoe workers at the following plants: Jodi Shoe Co., Derry, N.H.; Maine Shoe Corp., Brunswick, Me.; Goldberg Bros., Inc., Haverhill, Mass., National Ballet Makers, Inc., Medford, Mass.; Stage Door, Inc., Raymond, N.H.; and Kramer Shoe Co., Inc., Haverhill, Mass. The other two worker groups receiving certification were employed at Arista Mills, Winston-Salem, N.C. (cotton fabrics) and Wurlitzer Co., DeKalb, Ill. (pianos). The petitions from the shoe workers followed an evenly-divided Tariff Commission report and a Presidential decision to accept the determination of those Commissioners who found import injury. The petition from the workers at Arista Mills followed a Tariff Commission determination that the workers had lost their jobs due to increased imports while the piano workers petitioned for eligibility certification following a Commission finding of injury to the domestic industry and Presidential authorization for firms and workers in the industry to apply for assistance.

Interior — Endangered Species: A regulation requiring certain documents to accompany importation of specified endangered species has been deleted as unnecessary. Affected by this amendment are imports of any primate, alligators and crocodiles, cats, rhinoceros, sea turtles, falcons, caracaras, hawks, eagles, parrots and parakeets. In a related development, Minneapolis-St. Paul has been added to the list of ports of entry for fish, wildlife, and products thereof under the endangered species regulations pursuant to the Wildlife Preservation Act, P.L. 91-135 (*Fed. Reg.*, May 11).

Agriculture—Fruit and Vegetable Imports: Pursuant to provisions of section 8e of the Agricultural Marketing Agreement Act of 1937, as amended, Agriculture has announced new size and inspection requirements for fresh tomatoes imported from May 26 to June 30. In addition, Agriculture lowered on May 17 the minimum grade requirements for imported white seedless grapefruit and all seeded grapefruit and established on May 27 size and grade requirements for imported Irish potatoes. Section 8e prohibits the importation of specified fruits and vegetables unless they meet the same requirements as those shipped under marketing orders in the U.S.

U.S. Court of Appeals—Tomato Case: In a recently-decided case, the U.S. Court of Appeals upheld the plaintiff's contention that importers should have the opportunity to make oral presentations to the Secretary of Agriculture before restrictions are placed on imports under authority of section 8e of the Agricultural Marketing Agreement Act of 1937. The case was brought to court by importers of Mexican tomatoes (see *International Commerce*, June 15, 1970, p. 6.)

Agriculture—Egg Inspection: The Department of Agriculture published in the May 28 *Federal Register* regulations governing the inspection of eggs and egg products pursuant to the Egg Products Inspection Act, passed in the 91st Congress. The program for egg products inspection will become effective on July 1, and the program for shell eggs will become effective July 1, 1972. Imports will be required to meet the same standards as domestic products.

INTERNATIONAL

Foreign Dumping Actions: The Canadian Department of National Revenue has made a preliminary determination of dumping regarding standard and fire-rated gypsum wallboard from the U.S. A provisional additional duty will be levied on imports pending consideration of the question of injury to a domestic Canadian industry.

In addition, an investigation was initiated in May concerning alleged dumping of steel EI transformer laminations and steel electrical motor rotor and stator laminations of U.S. origin.

New Committee To Advise Secretary On World Trade, Investment Policy

Fourteen U.S. business leaders have been appointed to an International Business Advisory Committee to advise Secretary of Commerce Maurice H. Stans on U.S. world trade and investment policy.

"This group of substantial American businessmen, whose experiences range widely over the full scope of international trade and investment relationships, will be of invaluable assistance to us during this period when our country is faced with many serious international business problems," Secretary Stans said. "It will assure us that we have the necessary guidance in the formulation of federal policies in this critical area. And these experts will help us anticipate and consequently be on top of areas that need our attention before problems develop."

Committee membership

The members of the new Committee are: Roger S. Ahlbrandt, President, Allegheny Ludlum Industries, Inc., Pittsburgh; Frederick B. Dent, President, Mayfair Mills, Inc., Arcadia, S.C.; Carl A. Gerstacker, Chairman of the Board, Dow Chemical Co., Midland, Mich.; Virgil W. Grant, Financial Vice President, Caterpillar Tractor Co., Peoria, Ill.; W. L. H. Griffin, President, Brown Shoe Co., St. Louis.

Also Herbert W. Jarvis, Jr., President, USM Corp., Boston; Gilbert E. Jones, Chairman, IBM World Trade Corp., New York; Daniel R. Owen, Jr., Senior Partner, Owen, Ward and Geldzahler, Attorneys, Salt Lake City; Edmund E. Pendleton, Jr., Vice President and Director, Leon Tempelsman & Son, Inc., and Counsel to the Washington, D.C., Law Offices of Leibman, Williams, Bennett, Baird and Minow; Dr. Simon Ramo, Vice Chairman, TRW, Inc., Redondo Beach, Calif.

Also John Sagan, Vice President and Treasurer, Ford Motor Co., Dearborn, Mich.; Charles B. Thornton, Chairman, Litton Industries, Beverly Hills, Calif.; Alfred H. VonKlemperer, Senior Vice President, Morgan Guaranty Trust Co., New York; and Dr. Jesse Werner, Chairman and President, GAF Corp., New York.

Eleven members of the new Committee, which will meet several times a year at the Secretary's convenience, held an organization meeting in Washington on May 25. Peter Peterson, Assistant to the President for International Economic Policy, met with the new group.

United States Is Top Foreign Licensor In Federal Republic Of Germany

As the Federal Republic's principal foreign licensor and the major recipient of German license royalties, U.S. industry is participating in the steadily rising level of such payments.

With regard to its international transactions covering the exchange of licenses and patents (excluding copyrights), the Federal Republic reported a net outflow of more than $110 million for 1965; by 1969 such expenditures amounted to almost $200 million (1969 amount converted at the rate of $1=DM 3.66) and reached about $220 million in 1970. Such exchange is assuming ever more diversified forms and now ranges from licensing contracts between independent enterprises, exchange of industrial expertise, and agreements on joint financing and evaluation of technological research to the centrally controlled distribution of expenses and earnings among the subsidiaries of multi-national combines.

For the use of patents and licenses (excluding copyrights), German business firms remitted to the United States in 1969 almost $134 million, or about half the total amount spent for this purpose. By contrast, German receipts from patents and license rights sold to the United States in that year totaled $18 million.

The statistics in this article appear understated as they pertain only to those patent and license transactions for which payment is clearly identifiable. They do not include transactions in which services of about equal value are exchanged, a form of contract which has assumed considerable importance in recent years.

U.S. firms are by far the principal licensors in all fields except those of food, beverages, and tobacco for which Swiss firms are the leading licensors. U.S. firms derive their largest returns from the following: electrical engineering, chemicals, metal-producing and metal-working industries; food, beverage, and tobacco industries; and in precision instruments and optical goods.

The German Council of Industry and Trade (DIHT) recently indicated that it anticipates not only a further rise in the number of licenses granted by U.S. firms, but also the maintenance by U.S. companies of their leading position as foreign licensors in Germany.

Information of possible interest to a potential U.S. licensor is available in a bulletin, entitled "Patent Licensing Agreements with Firms in the Federal Republic of Germany and West Berlin," which may be obtained from the Western Europe Division, BIC-888, U.S. Department of Commerce, Washington, D.C. 20230.

Trade Fairs, Centers

Scientific, Electronics Shows Set For Swedish, French Trade Centers

American exporters will display selected scientific instruments in an exhibition of instruments for physical and chemical measurement at the U.S. Trade Center for Scandinavia in Stockholm, Nov. 22-27.

The Nordic market for these selected instruments was valued at $74 million in 1969. Currently, U.S. suppliers provide almost 20 percent of this market, or about $15 million worth. The U.S. share of the electro-optical instrument market in Sweden and Denmark rose 500 percent between 1968 and 1970.

U.S. Promotions List

A listing of sales opportunities for U.S. firms in five U.S. commercial exhibitions, trade fairs and solo displays and 16 shows at the nine U.S. Trade Centers is presented in this issue starting on Page 49.

WHAT'S THIS?—*Reaching into a polymer residue cleaner is U.S. Ambassador to France Arthur K. Watson; J.S. Maxson, Procedyne Corp., watches. The Ambassador visited the American exhibition during Chimie at Paris in April.*

The exhibition will include products in these areas: nuclear radiation detecting and measuring, physical properties testing and inspecting, optical and electro-optical measurement devices, laboratory analysis, and processing of scientific data.

For information contact Stanley Hays, 202-967-5751, Department of Commerce, Washington, D.C. 20230, or any of the Department's 42 Field Offices.

Electronics equipment

The French electronics industry, one of the fastest growing sectors of that nation's economy, is generating demands for a wide variety of U.S. products used to test, design, produce and process microcircuits and related electronics equipment.

To assist American manufacturers and suppliers in this market, an exhibition of microcircuit equipment will be staged at the U.S. Trade Center in Paris, Nov. 15-19.

From 1961 to 1969, sales of French electronics equipment and components rose 125 percent, for an average annual growth rate of 11 percent. From 1969 to 1970, the industry expanded sales by 11.5 percent, for a total of $2 billion.

Products with a good sales potential include automatic circuit test systems, omnitesters, dip and laser testers, semiconductor molded components, electrographic machines, fast transistor testers, and various infrared programmable sealers.

Call John Gleason, 202-967-2434, Department of Commerce, Washington, D.C. 20230, or contact any of the Commerce Department's Field Offices.

Air Show Success

First reports from the 184 exhibitors in the Commerce-coordinated exhibition at the Paris Air Show indicate that more than $80 million in first year sales will result from the event. On the sales floor, $7.3 million in orders were received; for the coming year, $73.6 million more is anticipated.

Fourteen representatives were signed at the May 26 to June 7 show, and negotiations are continuing with 71 additional candidates. The U.S. Pavilion drew 560,000 visitors and 6,100 businessmen.

A detailed story on the U.S. exhibition in the Paris Air Show will appear in an upcoming issue of **Commerce Today.**

Chimie Ends With 66 Reps Under Review

Sixty-six agency and distributorship agreements were still being negotiated at the conclusion of the U.S. exhibition of chemical processing equipment at Chimie 71 in Paris, Apr. 24-29.

The 38 exhibitors signed two French representatives and are projecting sales for the coming year of almost $6.1 million, including over $1.1 million for orders written at the show. About 6,000 business visitors registered.

Ceilcote Co., one of 17 firms interested in contacting overseas affiliates, now plans to establish four regional sales offices in France; this was the Ohio firm's first sales venture in France.

Booming Congolese Economy Could Get Further Boost From Oil Find

The Congolese economy continued to boom last year, reports the U.S. Embassy in Kinshasa, registering sizable gains in nearly all areas of business activity. The gross domestic product moved up by more than 8 percent, as mining, agriculture, manufacturing, construction and services, all pushed ahead briskly. Real incomes increased substantially as wages rose sharply while prices levelled off. During the latter part of 1970, however, the fall in the copper market began creating problems in the budget and balance of payments which are persisting with greater severity into 1971.

Favorable outlook

Nevertheless, the economic situation remains good—fundamentally—and the recent recovery of copper prices, likely to continue through the remainder of the year, is raising hopes that 1971 will turn out to be better than originally expected. Inflationary pressures of the "cost-push" variety are reappearing and the Central Bank is limiting credit availability to combat them. Fiscal authorities, too, are tightening their control over budget expenditures and there are indications of a reappraisal being under way of past extremely liberal import policies. Increased levels of foreign public assistance are expected to flow in this year, as well as a somewhat higher volume of foreign private investment, which is being vigorously courted at the highest level.

Medium to long-term prospects for the economy appear brighter, as new investments in copper expansion, aluminum, steel, and agriculture come into being. Also, discovery of important petroleum reserves off the Congo's narrow coastline late last year is adding an important new ingredient to the economic future of the country. The finding was made by a Gulf-led international consortium that had been drilling offshore for about a year. Economic impact of the discovery is seen here as becoming felt more over the medium and long-term than during this year or next, since actual exploitation of oil fields takes time and preparation to get underway. The Congo could become self-sufficient in oil in less than three years and a significant exporter within five years.

Promoting the development of the country's resources through private enterprise is SOCOFIDE, the newly established development bank. In operation less than a year, it is fast expanding its loan activity.

In the public sector, a more rational allocation of public resources is being set forth in the form of a basic five-year development program, covering the 1971-75 period. The program envisages fairly high growth rates of production, consumption, and trade, both domestic and international, leading progressively to higher living standards. Role of private enterprise and foreign investments in achieving these goals has been particularly emphasized. The Government will be undertaking to spend one billion dollars over 1971 through 1975 in expanding the nation's infrastructure as a means of accelerating agricultural and industrial growth through the attraction of private capital.

Geographically, the plan envisions that economic growth will center around three "poles of development"—Kinshasa, Lubumbashi, and Kisangani, which will be linked by modern communications and transportation networks. Kinshasa will remain and expand as a manufacturing and trade hub, in close proximity to a power, steel, aluminum, and oil complex in the Matadi-Banana region. Lubumbashi will retain and enlarge its supremacy as a mining and metallurgical center while Kisangani, including Bukavu-Isiro, will form the knob of a revived agricultural region supported by an array of processing industries. Development of tourist-related works, especially in the Lake Kivu-Lake Albert areas, will also be pursued.

Gradual, but perceptive changes in trade and investment patterns are taking place in the Congo. One of these is the trend away from reliance on the former colonial power. A second trend, related to the first, is toward more direct Congolese involvement in trade and investment. The third trend is toward import substitution, the building of entirely new industries, and increased processing instead of simply mining of primary products.

Meaning for U.S. business

In over-all terms, these developments should open new opportunities for U.S. businesses. Certainly, the contraction caused by lower copper prices will have an effect on certain governmental and private expenditures, but it should be noted that governmental investment expenditures are not being cut. Any reduction probably will be in expenditures on luxury items, and the United States does not have a large share of the luxury market. Further, if the Government finds it necessary to impose restraints on imports, it is likely that luxury consumer goods will be the first to be hit.

Since 1967, the U.S. share of the Congolese market has been declining, in absolute value as well as percentage share. This trend was reversed in 1970, but this was largely due to two or three large sales of expensive items. In the recent past, the U.S. share of the Congolese market consistently was reckoned in the 20 percent range. In 1969 and 1970 the U.S. share was closer to 10 percent. Therefore, in order to regain market position, the United States must more than double its sales to the Congo.

One important implication for the United States in the trend away from reliance on Belgium might be the gradual diminishing of Europe as the first-thought-of source of supply. As more Congolese become active in the import trade, they will have less of a tendency to think only in terms of European products, as their European predecessors did, and more of a tendency to search out the best deal in terms of c.i.f. price and credit terms offered.

Another implication is that American firms which currently are represented by European-controlled firms should make every effort to assure that their representatives ride with the tide rather than fight it. Their agents should be encouraged to divorce as much of their operations as possible from the home office and to begin seeking more than token Congolese participation in the capital and management of the company. American firms should insist that business dealings with representatives or distributors in the Congo be done directly rather than through European home offices.

Seek qualified distributors

Firms seeking distributors for the first time should make an effort to find qualified Congolese distributors or at least firms with Congolese participation. At present, this is often difficult, but if successful, the effort may be worthwhile in the long run. By far the best method of representation, and one which has the wholehearted support of the Congolese Government, would be for the supplier to open his own direct outlet in the Congo, provided potential volume would warrant such a step. Alternatively, perhaps several U.S. manufacturers of approximately related products might jointly open, or at least finance and staff a direct retail and distribution outlet.

Finally, American firms should begin capitalizing on the trend toward increased industrialization. U.S. products in the area of industrial machinery and equipment enjoy an excellent reputation and in most instances are price competitive. The primary problems are in the areas of credit terms, delivery times, and after-sales support. With more aggressive salesmanship and support, U.S. firms can increase their already respectable share of this market, but sales will have to increase considerably in absolute terms just to remain even in relative terms.

U.S. Exporters In Korean Market Face Growing Japanese Competition

The Republic of Korea has made remarkable strides toward economic development and diversification since the mid-sixties, reports Nicholas S. Lakas, Commercial Counselor at the U.S. Embassy in Seoul. Relevant development planning coupled with substantial foreign capital inflows have enabled Korea to register one of the highest economic growth rates in the world. Its average annual rate of real GNP growth for the past several years has exceeded 9 percent—from $2.4 billion in 1962 to $5.4 billion as of the end of last year. Per capita GNP for the same period increased roughly from $84 to $173.

The Republic's international reserves have continued to swell in spite of its trade imbalance. Gold and foreign exchange holdings approached $587 million by yearend 1970—an impressive gain of $300 million above the 1962 level.

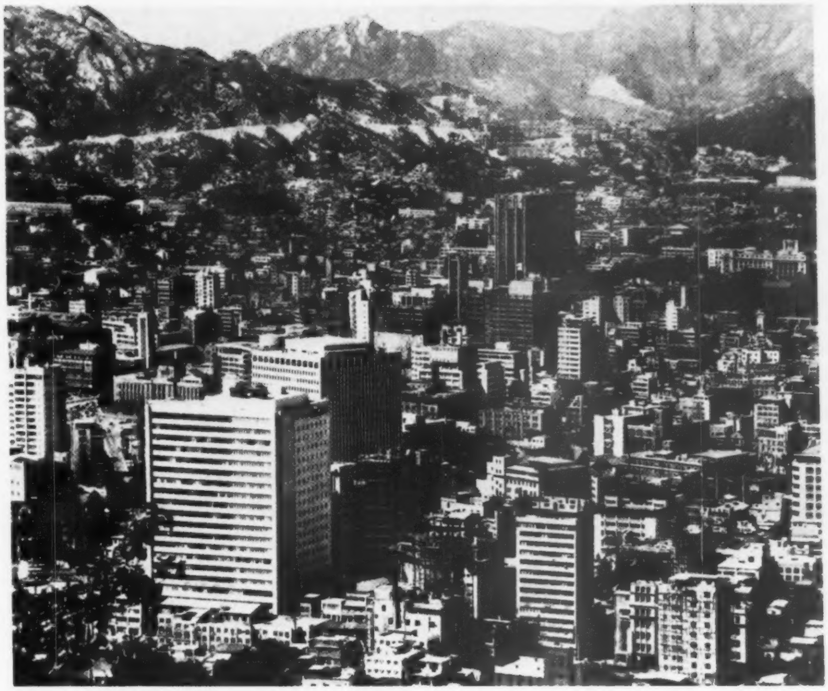
However, the rapid pace of economic expansion has brought on problems of trade imbalance, inflation, and debt service. The Government is aware that the long-run stability of the country's economy and its capacity to attain viability by the next decade will depend largely on Korea's ability to deal with these growing pressures.

Prospects for maintaining or expanding the present level of U.S. sales in the next two to three years, though promising, will depend on the capability and willingness of American exporters to compete more vigorously with the Japanese, especially for the commercial import market financed by Korean government-held foreign exchange (KFX).

For Korea, the de-escalation of the Indochina war and resultant decline of invisible earnings, plus reduction of U.S. foreign aid authorizations, suggest it may not be able to count on capital inflows of sufficient volume to offset its trade deficit in the near future. To counter this anticipated slackening in foreign capital inflow, Korea is taking steps to increase the domestic savings rate, to encourage capital formation through mobilization of domestic savings, to provide for domestic investment by vitalizing the stock exchange, to induce selected foreign equity, and to increase its tax revenues.

The Government is attempting to harness the inflationary spiral. Recent consultations with the International Monetary Fund produced a $25 million stand-by arrangement. Korea's right to borrow foreign exchange from the IMF under the agreement is contingent upon the implementation of measures which include ceilings on domestic credit expansion and restraints on new foreign indebtedness. Stabilization efforts, including reduction of liquidity by adjusting the money supply, continue apace.

Spurred by its success with the first (1961-66) and second (1967-71) Five-Year Development Plans, Korea is preparing to venture shortly into its third development program for the next five years. The 1972-76 blueprint calls for private and public investment expenditures of about $12 billion. A major share of this investment will be in manufacturing, with particular emphasis on heavy and chemical industries. A large portion of the public sector investment will be directed toward improving the communication and transportation network, expansion of public health facilities, development of the major river basins, construction of low cost housing, and rural development. Korea has in mind, too, the further enhancement of its technical and scientific development.



INVESTMENT IN KOREA—*Many large, modern buildings have been erected in Seoul since the end of the Korean War. The country's 1972-76 blueprint calls for private and public investment expenditures of about $12 billion.*

Investment outlook

Industries expected to experience the most rapid expansion include metals, machinery, chemicals, and textiles. To ameliorate its trade imbalance, the Republic intends, moreover, to modernize its export industries, diversify exports, and to accelerate, where practical, the substitution of imports with home products.

Meanwhile, the cadence of public and private sector development projects has been stepped up; public and private sector tenders are increasing in number.

Foreign investments, particularly export-oriented joint ventures and others which introduce new technology, are sought but on a more selective basis. The Government is also presently seeking to define and identify more precisely the development parameters of the industrial sector within the Third Five-Year Plan. It intends, furthermore, to amend and update the Foreign Capital Inducement Law.

American investor confidence and interest in Korea revived in the latter months of 1970. Korean statistics show that new, U.S.-involved projects amounting to $50.2 million in equity were approved in 1970 under the Foreign Capital Inducement Law, compared to $11.8 million for the preceding year. Overall, aggregate U.S. equity investment by year-end 1970 was reported to be in the vicinity of $128 million. Prospects for further increases in U.S. equity inflow in the next two to three years appear promising.

Japanese investor interest continues on the upswing together with Japan's increased participation in the Korean economy. Total FCIL-approved Japanese equity in 1970 was roughly $21 million, raising Japan's aggregate equity total to nearly $57 million.

The growth of the economy—especially the industrial sector—has produced significant changes in Korea's trade pattern. Since 1962, commodity exports have burgeoned at an average annual rate of forty percent, permitting earnings from foreign sales to increase from f.o.b. $38 million to the vicinity of $882 million last year. Manufactured products, which presently account for some eighty percent of the total outflow, have replaced agricultural exports as the primary foreign exchange earner.

The United States, Korea's leading buyer, took 44.2 percent of the Republic's total exports in 1970, chiefly textiles, wigs, and plywood. Though the United States retained its favorable trade balance with Korea, the plus margin narrowed to $194 million compared with $218 million registered for the preceding year.

Japan in strong position

Japan purchased $234.3 million in 1970, ending up with a whopping trade balance in its favor of close to $600 million. Sales to

GLASSMAKING IN KOREA—*Laboratory above is part of the Hankuk Glass Industry Co., one of the country's largest glass-producing firms.*

Japan consisted largely of fish and fish preparations, textile fiber and finished products, raw silk, ore and scrap. Korea is eyeing market potentials in Southeast Asia and Latin America.

Despite the phenomenal increase in the country's export traffic and the existence of import controls, Korea's sizable trade deficit continues to persist, though the gap was reduced last year by 11.9 percent from the 1969 total. Korea's economic expansion drive over the past several years has necessitated a rising import volume to underpin its economic development. Consequently, Korea's import bill has surged from c.i.f. $421.8 million in 1962 to an all-time high of $2 billion for 1970. Machinery products, transportation equipment, and chemicals are beginning to displace agricultural products and semi-manufactures as Korea's leading imports.

Korea's commercial and concessional imports from Japan and the U.S. in 1970 reached a combined c.i.f value of roughly $1.4 billion, or 70.3 percent of total imports. The U.S. competitive position, although improving in dollar value, continues to trail Japan, Korea's primary supplier. Overall imports by value from the United States in 1970 reached a new high of $584.8 million, a $54.6 million (10.3 percent) increase over the 1969 tally. Japan scored with deliveries amounting to $809.3 million c.i.f., $55.5 million (7.4 percent) above its 1969 level. The U.S. share of the market inched upward to 29.5 percent compared with 29.1 for the previous year. Surprisingly, Japan's share declined slightly to 40.8 from 41.3 percent in 1969. The Federal Republic of Germany, number three in the 1970 trade race, clocked a $67.2 million c.i.f. delivery figure, an $11.8 million slowdown from the preceding year.

U.S. deliveries of manufactured goods and other non-agricultural items gained ground in 1970 vis-a-vis American agricultural commodities. For that year, wheat cotton, pulp, rice, and animal feed comprised approximately 37 to 40 percent of all U.S. sales—a downward shift from the 46 percent recorded in 1969. Major U.S. exports to Korea of manufactured products in 1970 included transport equipment, plastic materials, heating and cooling equipment, transistor components and semiconductors, pumps and centrifuges, construction and mining machinery, mechanical handling equipment, and aircraft. There were also substantial purchases of scrap iron and steel, inedible crude material, and mineral and chemical fertilizers.

U.S. gains in KFX market

For the United States, AID-financed shipments have become a less important feature of Korean imports. Encouragingly, the United States, in spite of intensified Japanese competition, continues to gain in the increasingly significant KFX market. Of Korea's total global KFX purchases in 1970, the United States captured 21.1 percent with a sales tab of $259 million compared with its 18.5 percent performance ($195 million) for the twelve-month span preceding 1970. Though Japan's cut of the KFX account also rose to $536.6 million from $466.3 million, its market share declined to 43.6 percent from 44.3 percent.

Purchasing power is relatively stronger despite upward pressures on the cost of living. Consumer demand is growing in a price-conscious market. Shoppers are evincing a more sophisticated partiality for product appearance and quality. Trade competitors, particularly the Japanese, recognizing Korea's dramatic upsurge, have stepped up their promotional activities through trade and economic missions. The Japanese also offer lower prices and more liberal credit terms (at least initially), cheaper freight rates, quicker deliveries, better and more accessible local repair services, and, increasingly, technical training. Moreover, they employ the Korean language advertising media extensively. Their intensive sales efforts are also reflected by more frequent, lengthier visits by home office or regional representatives to oversee the performance of their Korean associates.

U.S. firms score

Notable successes in the Korean market were recently scored by a number of hard-driving U.S. firms. Among them: Westinghouse's sale of the nuclear reactor to the Ko-Ri power plant project; GM's contract for the delivery of diesel-electric locomotives; GMC's winning bid for trailer-tractors; Ellicott Machinery Corp. sale of a cutterhead dredge and related equipment; Gilbarco's capture of a trade opportunity for gasoline pumps; Emhart similarly got the nod for high speed bottle-making machines; Lyon International Co. was selected to perform a technical survey and feasibility study of Korean ports; Greyhound buses have become a familiar sight on the Seoul-Pusan superhighway.

Honduran Steps To Curb Imports Make Many U.S. Goods Competitive

The Honduran Government found itself with serious economic problems at yearend 1970 when negotiations collapsed between the member countries of the Central American Common Market (CACM) for a *modus operandi* to resume the integration movement halted earlier by the outbreak of hostilities with El Salvador.

Richard C. Graham, Commercial Attache at the U.S. Embassy in Tegucigalpa, reports that the current account deficit for 1970 was $74.6 million, double that of a year earlier. Foreign exchange reserves were drawn down $14 million during 1970, leaving a balance of only $9 million, equivalent to twenty days imports. Imports had jumped by 20 percent while exports were almost static, with the result that the trade deficit grew from $15 million to $48 million in one year. The GNP growth rate in constant prices was also static at about 2.6 percent for 1970. Commercial activity had been dampened in late 1970 by an increase in the Central Bank's legal reserve requirement designed to force commercial banks to decrease outstanding loans to the private sector. About the only positive statistics concerned private foreign direct investment, which almost tripled in 1970, and public sector investment, which rose one-third over the previous year.

Tariffs imposed

The Honduran Government acted rapidly to forestall any further deterioration of the economy once it was obvious the Common Market talks had failed. On Dec. 31 Decree 97 was enacted, imposing customs tariffs on Central American products, with some exceptions, equal to those on imports from the rest of the world. A second piece of legislation, Resolution 23, was announced on Jan. 16, 1971; it established two lists of products which must receive prior permission from the Central Bank before they may be imported, with the second list containing products which may only be imported on a cash basis.

Intent clear

The intent of this legislation was clear—to slow down imports and reduce the trade deficit without resorting to the drastic measures of licensing and exchange controls. Simultaneously, the lists were designed to protect local manufacturers and to encourage import substitution industries. At first, it was felt that the Central Bank would administer the prior approval provision of the legislation to severely restrict luxury imports, particularly automobiles. This has not occurred, presumably because the Government is satisfied that the requirement for cash payment for many imports is doing the job of easing the pressure.

Honduran imports soared by almost 20 percent in 1970 over the previous year to a level of $221 million, on the basis of provisional data. Exports were up by less than two percent to $172 million. Central America supplied approximately 25 percent of imports, but bought only about 11 percent of Honduran exports. The U.S. share of total Honduran imports declined slightly to about 41 percent. However, the United States took a larger share of Honduran exports, accounting for approximately 53 percent of the total. Overall, the United States recorded a favorable trade balance of just over $2 million with Honduras in 1970, excluding trade with the Canal Zone.

With the majority of consumer goods produced in Central America now subject to the same Honduran customs duty as the rest of the world, many U.S. manufactured products are once again competitive. An example is stoves and refrigerators, now being quoted at lower prices delivered from the United States than from regional manufacturers. Inquiries to the Embassy have risen sharply for items previously imported duty-free from Central America. Importers believe they can obtain goods of higher quality from the United States for what they must now pay for those of Central American manufacture. The United States is considered the only logical alternative source by many importers; first, because of consumer preference, and second, freight rates from Europe cannot compete with the containerized cargo service now available to the Honduran north coast from the U.S. southeastern ports and the rapid air cargo service.

Outlook for '71

With the new controls on credit, the outlook for 1971 is that imports will be held at the level of 1970 or slightly lower, with perhaps the United States gaining a larger share of the market. Exports should register a net gain of around $10 million, led by bananas, which have regained pre-1969 hurricane production levels. Banana exports should reach 56 million boxes this year compared to 41 million in 1970. The 1970 level of imports might not be sustained, however, if credit is further tightened. The degree to which inventory building occurred in 1970 in anticipation of restrictions could also affect order placements during the first half of the year. Expected price increases as old stocks are exhausted and new merchandise previously imported duty-free comes in duty-paid will soften import demand.

Finally, the requirement that many popular consumer items must now be imported on a cash basis will clearly prevent inven-

U.S. EQUIPMENT IN HONDURAS—*Trucks manufactured in the United States have been chosen by a new dairy plant, Productos Lacteos de Honduras, S.A., in Tegucigalpa. Specially designed tank trailers will bring fresh milk from farms to plant.*

tory rebuilding, as merchants do not wish to commit their scarce working capital even for a short-term. Local banks have shown a willingness to extend borrowing terms, but their liquidity may be restricted if the Central Bank decides to again increase reserve requirements.

Sales opportunities

Sales opportunities for U.S. capital goods may be stimulated by a strong push to create import substitution industries, by significant Export-Import Bank loans to finance capital equipment, and by continuing large-scale infrastructure projects financed by the World Bank and IDB.

The National Development Bank (BNF) will spend $2.25 million in equity and loans to promote industrial and tourist investment this year. The Financiera Hondurena made 68 loans totaling $3.75 million in 1970; the goal is $4.75 million this year, including $1 million recently obtained from the Eximbank. The Central American Bank for Economic Integration (CABEI) approved sixteen industrial loans totaling $7.8 million during the past fiscal year for Honduras, as well as six infrastructure loans totaling $9.4 million and two housing loans totaling $650,000.

Perhaps the largest new investment scheduled to start up this year is a shrimp farming venture of Armour and United Brands. The ponds will be built on 2,500 acres on the north coast, west of La Ceiba. Total investment will be $4.5 million over the next four years. By 1975 the intention is to be exporting 3.5 million pounds of shrimp annually to the United States. It is estimated that the net benefit to the Honduran economy will be $4 million annually after four years.

The Inter-American Development Bank is considering financing a new water supply and sewerage system for San Pedro Sula. The system will be designed to serve the city for thirty years and will cost an estimated $9 million. Bids for construction and equipment are expected by the end of the year. A combined World Bank-IDA loan of $11 million is being used to finance expansion of power facilities; invitations will be issued periodically during the next four years for this work.

Livestock development

Actual disbursement on a $2.6 million IDA loan for livestock development, supplemented by an additional amount from local sources, should begin this year and provide opportunities for U.S. exporters of breeding cattle, agricultural machinery and other related items.

Highway construction will continue to generate construction equipment imports. With certain major highway construction projects nearing completion, possibilities for exports of road maintenance equipment should improve as the Honduran Government formulates its requirements and source of financing for such equipment.

Other activities

Even if all the industrial projects do not materialize to give a boost to the economy, the United States will continue to have excellent trading relations with Honduras. Wheat sales will exceed $3 million this year, and there is a ready market for 5,000 bales of cotton if the price is right. Sears, Roebuck will open its second store later this year in Tegucigalpa; the first, opened in San Pedro Sula in late 1969, was an immediate success and an important outlet for U.S. products. The prevailing mood is business as usual with hope that negotiations can eventually be resumed for restructuring the CACM.

Worldwide Business Services

International trade specialists in the Department of Commerce and Foreign Service Officers in the U.S. Embassies and Consulates around the world are continually developing specific commercial opportunities through which American companies can find buyers, agents, partners or investors overseas. One of the major means for communicating these opportunities promptly and accurately to the U.S. business community is through the columns of this magazine. The section that follows presents details about U.S.-sponsored overseas exhibits, licensing and joint venture proposals, opportunities to sell to foreign firms and government agencies, appoint agents, major construction and expansion projects, and U.S. visits by foreign buyers.

U.S. Promotions Overseas

ITALY. Measurement, Test Equipment for the Electronics Industry. Italy's electronics industry is seeking the latest U.S. testing and measuring equipment. Italy is Europe's largest producer of electric household appliances, and its electronics industry is expanding rapidly. Market research confirmed that U.S. suppliers have opportunities to sell a wide range of measurement and test equipment in this growing market. The exhibition will coincide with the International Electronic Components and Measuring Instruments Exhibition. Call Robert Wallace, 202-967-4508. Milan Trade Center. Sept. 6-10.

UNITED KINGDOM. Electromechanical Precision Parts. U.K. imports of passive electronic components are forecast increasing at a yearly rate of 12 percent through 1972, by which time imports are expected to supply 20 percent of the demand. Overall demands for electronic componentry are estimated reaching $600 million by 1972 with approximately $96 million being supplied by imports, with the U.S. as the main source. Many high performance precision parts are in continuing demand, with no local sources available. Good sales prospects are also reported for new product developments offering advanced designs. Call Lee Swift, 202-967-4461. London Trade Center. Sept. 13-17.

SCANDINAVIA. Educational & Industrial Training Equipment. Scandinavian countries are intensifying their use of modern, advanced educational and industrial training aids and equipment applicable to public and private educational institutions, universities, adult education programs, company and labor union manpower training programs, business and management colleges, government agencies, libraries and television and film enterprises. Officials of educational institutions, industry and governmental organizations have indicated the time is ripe for an exhibition featuring the latest U.S. technology in this field including programmed and computer assisted instruction, electronic responders, closed circuit TV, video tape recording systems, microfilm reading and storage systems, language laboratories, teaching machines, projection equipment and software. Call John R. Crown, 202-967-4421. Stockholm Trade Center. Sept. 20-25.

FRANCE. Industrial & Commercial Security Equipment. The French businessman is becoming increasingly aware of his need for effective protection against losses incurred by fire and theft. Many French industrial plants, banks and commercial establishments have inadequate safeguards, or none at all. An important, expanding marketing opportunity exists for American manufacturers of alarm systems, fire detection and extinguishing equipment, parking lot security equipment, personnel identification systems, security cameras, electronic locking systems, pilferage prevention devices, check protection systems, document destruction equipment, and ancillary products. This event is being scheduled concurrently and promoted in cooperation with EUROPROTECTION, a major European exhibition of industrial security and safety equipment. Call Bruce Strong, 202-967-2835. Paris Trade Center. Sept. 27-Oct. 1.

JAPAN. Electronics Production Equipment, Components & Test, Measuring Instruments. Japan's production of all electronics products is expected to top $9 billion during 1970, of which the production of industrial electronic products is estimated at $2.5 billion, a 25 percent increase over 1969. Imports from the U.S. of electronics products in 1969 were valued at $274.8 million, a 40 percent rise over 1968. Call William Dawson, 202-967-5682. U.S. Commercial Exhibition, Japan Electronics Show. Osaka. Oct. 1-7.

GERMANY. Industrial Assembly Equipment. The field of assembly fastenings and techniques in Germany is still in the early stages of development. There are numerous ways to cut costs that have not yet been exploited. German manufacturers continue to look to the U.S. for new techniques in the field of special fasteners. American licensing agreements as well as agency representation are readily accepted. An estimate of the demand in Germany for industrial assembly equipment is between 10-15 percent of the demand in the United States. Contact Don Schmadel, 202-967-4601. Frankfurt Trade Center. Oct. 11-15.

SCANDINAVIA. Design Engineering Components for Machinery & Vehicle Equipment Manufacturers. U.S. exports of controls, components and parts to Scandinavian OEMs (original equipment manufacturers) totaled over $70 million in 1969. Scandinavian OEMs of machinery and vehicles rely heavily on outside suppliers for controls and components, and they import over half of their requirements for this equipment. Sweden imported over $472 million worth of various types of OEM equipment. Call E. C. Walls, 202-967-4256. Stockholm Trade Center, Oct. 11-16.

FRANCE. Refrigeration & Air Conditioning Equipment, Components. France is a growing market for U.S. air conditioning and refrigeration equipment as the rising standard of living spurs the modernization of food processing, storage, transportation, and merchandising methods, and the widening acceptance of residential, commercial and industrial air conditioning techniques. New market research indicates good sales prospects for packaged (unitary) air conditioning systems including split, roof-mounted, central, window and wall air conditioners. Call John Wolf, 202-967-4974. Paris Trade Center. Oct. 18-22.

KOREA. Industrial Machinery. Korea is continuing to forge solid economic gains; its growth rate is growing at 10% annually. Imports are also reaching new levels, with the U.S. supplying more than $630 million in 1970. Korea is seeking to correct a large trade imbalance by modernizing its export industries, through the use of new machinery and equipment, much of which must be imported. Call Robert Levine, 202-967-4705. U.S. Solo Exhibition, Second U.S. Industrial Machinery Exhibition. Seoul. Oct. 18-23.

JAPAN. Avionics & Ground Support Equipment. The aircraft industry in Japan is experiencing a dynamic revival. Imports of aircraft engines, navigation and ground electronics, navigation aids, and aircraft and ground support equipment are very strong, supplying more than half of Japan's demand. The technological level of Japanese-produced engines and certain instrumentation is still below that of U.S. and some foreign producers, and therefore, import demand is expected to remain high. Contact Bob Miller, 202-967-2991. Tokyo Trade Center. Oct. 25-30.

ITALY. Business Automation. Italian businessmen are modernizing their methods and procedures and looking to the U.S. to fill growing needs for advanced business equipment. Market research has identified insurance, banking and service sectors, as well as manufacturing industries and government agencies, as prospective purchasers. Items sought include

EDP, reprographic, microfilm and other business efficiency equipment. This exhibition will be held in conjunction with the Eighth International Exhibition of Office Machines and Equipment (SMAU). Call Herb H. Lindstrom, 202-967-3944. Milan Trade Center. Oct. 26-31.

UNITED KINGDOM. Research & Clinical Laboratory Equipment. Market research has identified a number of immediate and growing opportunities for U.S. suppliers to sell equipment to research and clinical laboratories in the United Kingdom. Industrial, university, and public research facilities, hospitals, and clinical laboratories have cited specific items of U.S. equipment that are of interest. Labor-saving, automated equipment, advanced equipment generally, are being sought. Call Joseph F. McNulty, 202-967-4653. London Trade Center. Nov. 1-5.

GERMANY. Electro-Optics/Laser Equipment. Germany, the largest European market for electro-optics/laser equipment, is entering a period of sustained market growth. The 1971-72 period should support an annual electro-optic/laser equipment sales growth of 50 percent. Demand is high for lasers, especially systems with industrial and commercial applications. Call George Kemp, 202-967-3088. Frankfurt Trade Center. Nov. 8-12.

FRANCE. Microcircuit Production Equipment. The French electronics industry is determined to maintain its position as one of the world's leading electronics producers. To achieve that goal the industry receives assistance from the French Government. Current emphasis is being placed on utilizing advanced electronic production techniques particularly in the area of components and microcircuits. U.S. manufacturers with equipment used to design, produce, process and test microcircuits and related electronics will find good sales prospects for their products. Call John Gleason, 202-967-2434. Paris Trade Center. Nov. 15-19.

BRAZIL. Printing & Graphic Arts Equipment, Business Equipment & Computers, Machine Tools, Construction Machinery. Brazil's printing and publishing industry imported $31.9 million worth of supplies last year with the U.S. providing a 35 percent market share. U.S. shipments of business equipment and computers nearly doubled between 1969 and 1970 to $35.3 million. Approximately $22.8 million of this amount was spent on EDP systems. Construction projects have expanded the market for U.S. made machinery to $93 million a year. Contact Vincent Doran, 202-967-3838. U.S. Solo Exhibition. Sao Paulo. Nov. 16-23

ITALY. Advanced Fluid Power Equipment Exhibition/Symposium. Italy's continued drive toward automating its industrial processes and manufactured equipment has created a market for fluid power equipment that is growing at a rate of 15-20 percent annually. Total Italian consumption of fluid power equipment for 1971 is estimated at $63 million. In 1970, Italy's imports rose nearly 21 percent to almost $15 billion. Market research has confirmed good sales opportunities for U.S. suppliers of motors, valves, pumps, servosystems, fluidic devices, and other fluid power equipment. Call 202-967-3968. Milan Trade Center. Nov. 23-27.

GERMANY. EDP Equipment. The Western European market for EDP equipment in 1970 was estimated at $2 billion and the forecast for 1974 is $3.6 billion. Germany, the host country for this trade fair, is the largest single country market in Europe. In 1970, the German EDP market reportedly reached $568 million and is projected to reach $1.15 billion by 1974. The U.S. supplies about 50% of German EDP equipment imports. Contact Andre Williams, 202-967-2425. U.S. Commercial Exhibition, SYSTEMS 71. Munich. Nov. 30-Dec. 3.

GERMANY. Equipment for Vacuum & Cryogenic Research. American sales of vacuum and cryogenic equipment in Germany's market are largest for the more advanced and sophisticated lines. American industry has been a leader in the application of advanced high and ultra-high vacuum technology in research and in specialized cryogenic lines. Call Don C. Schmadel, 202-967-4601. Frankfurt Trade Center. Dec. 6-10.

UNITED KINGDOM. Environmental Testing Equipment. Environmental testing facilities in the United Kingdom are seeking sophisticated equipment. Market research has identified over 100 items of U.S. equipment good market potential. Test data acquisition and analysis, electronic controls, and acoustical testing equipment are highlighted. Climatic cycling chambers and rapid-change high and low temperature chambers are also included in the list of products having high sales prospects. Call Gus Duda, 202-967-4461. London Trade Center. Dec. 6-10.

JAPAN. Air & Water Pollution Control. Japan is suffering with the problems of pollution. Her great factory cities, Tokyo, Osaka-Kobe, Nagoya and Fukuoka, like their counterparts in the U.S. and Europe, are daily showered with tons of pollutants. Rivers are choked with industrial wastes. The Japanese Government has acted to put into force laws which will clean up Japan's air and water. Antipollution equipment produced in Japan is not being made in great enough quantity or variety to meet all demands, which are predicted reaching $450 million by 1975. A seminar will run concurrently with the show. Call Randy Miller, 202-967-3363. Off-site Tokyo Trade Center Exhibition. Dec. 6-11.

FRANCE. Electronic Components & Measuring Instruments. The Paris International Electronic Components Exhibition is one of the largest electronics trade fairs in the world. More than 1,100 manufacturers exhibited in 1971, and attendance topped 65,000 trade visitors. The electronics industry is a dynamic sector of the French economy. Sales of electronic equipment are expected to increase 16% this year to a total of $1.81 billion. The telecommunications sector is strong, with expenditures of $1 billion planned this year by French Post & Telegraph to modernize the phone system. Call Bill Warnes, 202-967-4941. U.S. Commercial Exhibition, COMPOSANTS ELECTRONIQUES. Paris. Apr. 5-12, 1972.

Space Fully Booked

The following exhibitions and trade missions, in which all exhibit space has been reserved, are still open for visits by interested industry representatives. U.S. firms with sales representatives in these market areas could ask them to investigate the shows.

Separation Systems Equipment for Industry, London Trade Center, June 21-25; Security Systems & Equipment, Bangkok Regional Trade Development Center, June 28-July 2; Printing & Bookbinding Machinery, U.S. Commercial Exhibition, London International Printing Machinery Exhibition, London, July 13-24; Computer Input/Output Devices, Tokyo Trade Center, July 29-31; Plastics & Plastic Machinery, U.S. Commercial Exhibition, KUNSTSTOFFE '71, Duesseldorf, Sept. 16-23; Industrial Automation & Instrumentation Equipment, U.S. Commercial Exhibition, INTERKAMA '71, Duesseldorf, Oct. 14-20; Packaging Machinery, Mexico City Trade Center, Nov. 29-Dec. 3.

Sales opportunities in five U.S. commercial exhibitions, trade fairs and solo exhibitions and 16 shows at the nine U.S. Trade Centers are being offered to present and potential U.S. exporters between now and April 5, 1972.

Each Trade Center exhibition is limited to one particular line of products and centers are located in Bangkok, London, Milan, Mexico City, Frankfurt, Stockholm, Sydney, Tokyo and Paris. For further information on the Trade Center shows described or for more facts on U.S. exhibitions, **write:** *Commercial Exhibits Program, BIC-932, U.S. Department of Commerce, Washington, D.C. 20230.*

Trade missions are groups of U.S. businessmen organized to travel abroad promoting the export of U.S. goods and services made by their particular industry. **Write:** *Trade Missions Div., BIC-926, U.S. Department of Commerce, Washington, D.C. 20230.*

A product showroom where U.S. goods or literature can be displayed is also maintained at the American Embassy in Ethiopia. **Write:** *Edward W. M. Bryant, Commercial Attache, American Embassy, Crown Prince Asfaw Wossen St., Addis Ababa.*

Licensing and investment proposals from foreign firms are listed in these columns. Specific product interests in each proposal are highlighted in bold type to facilitate identification and each proposal is preceded by the appropriate four-digit products number taken from the Standard Industrial Classification (SIC) Manual.

Background information on opportunities abroad and also assistance on overseas investments are available from the Office of International Investment, BIC-878, U.S. Department of Commerce, Washington, D.C. 20230. "P" numbers should be used when responding to specific proposals.

For additional information on opportunities to manufacture foreign firm's products in the U.S., described under "Licensing In U.S.", write Commerce's Office of International Investment, BIC-874, or call 202-967-2248, referring to the File Number assigned each opportunity.

WTD indicates that a World Trade Directory Report containing financial and background information on the foreign firm is available for $2 from the Department of Commerce, BIC-924, Washington, D.C. 20230, or from any Commerce Field Office.

Licensing, Investment Abroad

2041—SPAIN—Producer of **wheat flour** seeks to expand and modernize its plant through joint venture arrangement. Firm offers direct participation in the company's management and profits. Firm, established in 1919, produces around 30 tons of wheat flour per day with a production capacity estimated at 100 tons per day. By expanding production, firm estimates high return on invested capital. Harinas Marqueta, S.A., Carretera de Soria s/n, Tarazona de Aragon, Zaragoza, Spain. WTD. P-71270

2231—NEW ZEALAND—A large wool processor in New Zealand is interested in contacting U.S. manufacturers in the area of **needle woven processing of blankets, carpets or felts** for the purpose of establishing a joint venture or manufacturing under license in New Zealand. Office of Minister (Commercial), New Zealand Embassy, 1145 19th St., NW., Washington, D.C. 20036. P-71271

2251, 2252—PHILIPPINES—Textile firm seeks licensing arrangement with a U.S. manufacturer of **hosiery**. Firm wants new designs and technical know-how in hosiery production and the use of a U.S. firm's trademark for hosiery products. Firm offers a royalty based on a percentage of sales in exchange for U.S. participation. Firm established in 1920 and presently manufactures underwear materials, hosiery, blankets and towels. Its factory is located in Manila and has an estimated annual production capacity of 1.2 million kilos of underwear materials and 300,000 k. of blankets and towels. Stephen Hontiveros, Technical Consultant, Central Knitting & Weaving Mills, Inc., 485 Lt. Artiaga Dr., San Juan, Rizal, Philippines or P.O. Box 245, Manila. WTD. P-71269

2834 — SWITZERLAND — Small, well-equipped pharmaceutical manufacturer and distributor seeks licenses to diversify present product lines. Particularly interested in **multiple sclerosis medication, diabetic tablets and ovulation retarding preparations**. Would consider diabetic specialties for baby care and baby foods. SA Adroka AG, Nauenstr. 63, 4002 Basel, Switzerland, Attn: Messrs. Berger & Buser. WTD. P-71272

3241—TRUCIAL STATES — Newly established firm seeks joint venture to construct and operate **240,000-ton capacity cement plant**. A feasibility study is being conducted by a Swiss firm, Holderbank. Organizers for the projects are in London. Joe Yache, P.O. Box 277, Abu Dhabi, Trucial States. P-71257

3310, 3400, 3710—MEXICO—Manufacturer of all basic steel mill products seeks joint venture to produce any **steel-based items** not already in production such as **heavy duty trailers, truck bodies, fencing and specialty steels**. Company is a major producer of steel in Mexico and operates six plants. M. G. Jones, American Embassy, Cor Danubio and Paseo de la Reforma, 305, Colonia, Cuauhtemoc, Mexico, D.F., Mexico. WTD. P-71232

3440—NETHERLANDS — Manufacturer of fabricated structural metal products offers **fully equipped plant near Rotterdam** located on harbor close to other industry, major highway and international airport. Plant equipped for 300 man work force. Machinery includes planers, lathes, special metalworking, erection equipment and tools. Offices, training facilities and living quarters for 110 workers. Industrial Commissioner for The Netherlands in the U.S., 1 Rockefeller Plaza, 11th Floor, New York, N.Y. 10020. P-71267

3560, 3714—ENGLAND—Major defense contractor seeks licenses to produce **light machinery, mechanical transmission equipment and automobile auxiliary equipment**. Light machinery desired along the lines of knitting machines, packaging machines and cash registers. In the field of transmission equipment, speed control devices, clutches and gear boxes are among those sought. Automobile auxiliary equipment will be considered along the lines of turbo superchargers, automatic gear boxes and air conditioning equipment. J. A. Beardsall, Project Engineer, Hawker Siddeley Dynamics Ltd., Gunnels Wood Rd., Stevenage, Hertfordshire, England. WTD. P-71248

3662—SWITZERLAND — Leading distributor of telecommunications equipment seeks to represent, and possibly later, to manufacture under license **fire and burglar alarms for banks, department, jewelry and fur stores**. Company has annual sales of $75 million. Write: Beat Muller, Sales Manager, Hasler Installations AG, Schwartztorstr. 50, 3000 Bern 14, Switzerland. WTD. P-71258

3693—SINGAPORE—Electronics subsidiary of widely diversified company with headquarters in Malaysia seeks joint venture, technical assistance arrangement or manufacturing licenses to produce in Singapore U.S. **electronic components and equipment** to include portable temperature sensing devices, portable heartbeat sensing devices and portable electrocardiograph equipment. Firm is experienced in design and assembly of electromedical apparatus and currently producing loudspeakers, medical equipment circuit boards, intermediate frequency transformers and radio chassis. Loke Mun Fai, Managing Director, Sanshiba Electronics (S) Ltd., 3815 E, Block 1, Jalan Bukit Merah, Singapore 3, Singapore. WTD. P-71253

3841—BRAZIL—Firm seeks licenses to manufacture **surgical instruments, orthopedic instruments and diagnostic apparatus**. Established in 1965 and presently manufacturing switches, cigarette lighters, and gasoline gauges for automobile industry. Gerson Jungerman, Commercial Manager, T.T.M.—Tratamento Termico de Metais Ltda., Rua Salvador Leme 193 a 203, Sao Paulo, SP, Brazil. WTD. P-71256

3999—SPAIN—Firm engaged in manufacture and sale of 100% European **human hairpieces for men** seeks $75.000 capital for expanding operations. Will consider any type of return proposed by interested investor. Firm reportedly exporting majority of products to the U.S.; sees market potential here for over $500.000. Anticipates selling in Europe, Australia and South Africa. Messrs. J. Labayrade and R. Albir, Principals, Belair Hairpieces, S.L., Virgen de Lourdes 18, Madrid (17), Spain. WTD. P-71254

6150—JAMAICA — A public company quoted on the Jamaica Stock Exchange wishes to enter into partnership with a U.S. **mortgage finance company** to provide medium and long-term loan facilities, especially in the fields of office buildings, condominium and housing projects. P.O. Box 486, Kingston 8, Jamaica. WTD. P-71255

Licensing In U.S

3541 — SWITZERLAND — A Swiss firm seeks a manufacturer for its multipurpose **metal working machine tools**. The equipment is mainly used for nibbeling, sawing, filing, refining, and polishing of special workpieces such as making prototypes, molds, surface treatment and the manufacture of printed circuits. **File 2048**

3551 — GERMANY — Manufacturer of chemical machinery and equipment is offering a license for a **stirring apparatus**

that was recently patented in the U.S. The agitator drive and stirring shaft seal are located in the gear housing thus constituting a single structural unit which extends into a container, particularly a high pressure container. **File 2049**

3551 — GERMANY — A German firm wishes to make arrangements for the production of their new type of **coffee roasting machine. File 2050**

3551—JAPAN—A Japanese **food packaging equipment** firm seeks an American firm to manufacture and sell their equipment under license. **File 2051**

3611—SWITZERLAND—A Swiss company offers for licensing an **electric circuit transfer tester** for maximum short circuit current 12mA-O, 3mA-O, 03mA. The equipment consists mainly of a tester including a transistorized oscillator combined with a crystal loudspeaker which gives accoustic signals according to the resistance of the circuit being measured. **File 2052**

3622—FRANCE—A French firm is interested in making manufacturing arrangements for their **pushbuttons and indicating lights for industrial machinery.** Included would be pushbuttons providing momentary action, maintained action, mechanically interlocked, plus illuminated pushbuttons with both momentary and maintained action. **File 2053**

3622—FRANCE—Firm is interested in making manufacturing arrangements with an American firm to make their luminous or non-luminous control buttons, their selector and control switches, and luminous indicating lights. **File 2054**

Canadian Firms Seek Manufacturing License

Manufacturing licenses for a wide range of products are sought by 125 Manitoba based Canadian firms. Most of the companies are located in and around Winnipeg but there is representation from throughout the province. Products sought are very diversified and range from denture cleaners to steel fabrication, and from electronic components and controls to pollution control equipment.

Any firm interested in negotiating a licensing agreement on its manufacturing processes should briefly outline its interests in a letter to the Canadian provincial department responsible for compiling the list. With around 300 different products involved, there appears a reasonable chance of matching a potential licensee's requirements.

Write: J. L. McMurtrie, Director, Product & Process Div., Manitoba Dept. of Industry & Commerce, 511 Norquay Bldg., 401 York Ave., Winnipeg, Manitoba.

Somali Wants Equipment, Agent For Water System

Somali Democratic Republic seeks equipment for a water distribution system. An agent to purchase materials for the water distribution system, also solicitation of bids when item subject to competitive pricing, are being sought. Agent would act as purchaser and expediter to assure proper packing, shipment and insurance of all goods purchased. Payments through letters of credit. Interested parties should state experience, previous clients, terms. National Water Agency, P.O. Box 1076, Mogadiscio.

Foreign Trade Opportunities

These trade opportunities are based on reports received from the U.S. Foreign Service by the Business Opportunities Staff and other units of the Bureau of Domestic Commerce (BDC), U.S. Department of Commerce, Washington, D.C. 20230. The commodities in which foreign firms have interest are indicated by the five-digit numbers and commodity classifications which are from the Standard Industrial Classification (SIC) Manual and the Numerical List of Manufactured Products, 1967 Census of Manufacturers, used extensively by Government and industry.

U.S. firms should also be aware that the listing in Commerce Today *of opportunities to trade in specific commodities and technical data does not necessarily imply approval of their export by the Department of Commerce pursuant to the Export Administration Act of 1969. Applicable export licensing regulations must be followed.*

Every effort is made to include only firms or individuals with good reputations. However, the Department cannot be responsible for any trade relations.

The mark (●) indicates that this trade opportunity is a request for bids by a foreign government agency. A (★) at the end means that additional information may be borrowed by U.S. firms from the individual division of BDC. To avoid delays, requests for loan material should specify the country, commodity and foreign government agency.

WTD indicates that a World Trade Directory Report containing financial and business background information on the foreign firm is available for $2 from the U.S. Department of Commerce, BIC-924, Washington, D.C. 20230, or any Commerce Field Office.

Direct Sales

Specific foreign firms have expressed interest in direct purchases of the products below. See also the "Agencies" listing.

Field crop farms

01140 — GERMANY — Raw tobacco for cigars, cigarillos. Direct purchase & agency. Correspondence requested in German. Blauband Zigarren & Stumpenfabriken (mfr., exporter), D-7701 Watterdingen, Kreis Konstanz a. Bodensee. WTD 3/70.

Ferroalloy ores

10691—MEXICO—Crude chromium ore, high chrome content of type used for manufacture of chrome salts, 20-25 tons per mo. Especialidades Quimicas Industriales, S.A. (importer, mfr.), Apartado Postal 240, Colonia del Valle, Nuevo Leon. WTD in prep.

Grain mill products

20422—MEXICO—Minerals to be used as trace element additives in animal feeds, including: manganous oxide; zinc oxide; ferrous sulfate; copper oxide; cobalt carbonate; ethylene diamine dihydriodide (EDDI) with 80% iodine; other materials include: bedlon, an anti-caking conditioner, or equal, a conversion stabilizer (FDA Reg 121-246); Bentonite (FDA-GRAS). Domingo Guerra, Trazas Minerales, S.A. (importer, dist.), Apartado Postal 1040, Monterrey, N.L. WTD in prep.

20424—FRANCE — Dried grape, orange, citrus pulp. Alfalfa (importer, agent, exporter), Vimer, 61-Vimoutiers. WTD in prep.

Broad woven fabric mills, manmade fiber, silk

22214—BELGIUM — Gray goods, weaving mills, synthetic. Teinturerie Belgo-Suisse S.A. (mfr.), 124 Ave. de Schaerbeek, 1800 Vilvoorde. WTD 5/71.

Yarn, thread mills, products

22814 — AFGHANISTAN — Nylon yarn. Mohammed Azam & Co., KG (importer, dist., mfr.), Charahi Sedarat, Kabul. WTD 5/71.

Sawmills, planing mills

24210—JAMAICA — Lumber; birch, beech, or pirana pine (No. 1 common). Specifications: 1½" thick (6/4"); 6" and wider; random length. Requirements: 12,000 ft. every three mo.; quotation c.i.f. Kingston. C. P. & W. Woodwork Ltd., Attn: Mrs. M. Watt (dist., mfr.), 10 Payne Ave., Kingston 11. WTD in prep.

Household furniture

25112 — CANADA — Wood living room furniture of advanced design. Direct purchase & agency. Inov Importex Inc. (importer, dist., mfr.), 356 Wellington S., Sherbrooke, Quebec. WTD in prep.

25113 — CANADA — Wood dining room furniture of advanced design. Direct purchase & agency. Inov Importex Inc. (importer, dist., mfr.), 356 Wellington S., Sherbrooke, Quebec. WTD in prep.

25115—CANADA — Wood bedroom furniture of advanced design. Direct purchase & agency. Inov Importex Inc. (importer, dist., mfr.), 356 Wellington S., Sherbrooke, Quebec. WTD in prep.

25190—ISRAEL—Plastic turntables for household, hotel, restaurant use; other household furniture. Direct purchase and/or agency. Ben-Zion Kichler (importer, mfr., agent), P.O. Box 3225, Tel Aviv. WTD in prep.

Paper mills, products

26217—ITALY—Waste paper, i.e., kraft paper cuttings, soft drink bottle containers made of kraft paper (used); large quantities (thousands of metric tons) needed. Direct purchase and agency. Correspondence requested in Italian, French. Mugnai, Emilio (agent), 373 Viale Italia, I 57100 Leghorn. WTD 11/70.

Converted paper

● **26400 — INDIA** — Heavy Electricals Ltd., a government agency, requests bids on supplying 124 tons of different types of phenolic coated kraft papers suitable for use in the manufacture of tropical grade tubes and cylinders and electrical insulation. Bid deadline June 30. Copies of the tender containing conditions and specifications available from Forest Products, Packaging, Printing & Publishing Div., BDC, Rm. 5099, Dept. of Commerce, Wash., D.C. 20230 ★(202-967-2738).

Publishing & printing

27214 — PORTUGAL — Art, educational magazines. Livros Horizonte, Lda. (importer, retailer), Rua das Chagas 17-1° Dto., Lisbon. WTD in prep.

Books

27311—PORTUGAL—Text books. Livros Horizontes, Lda. (importer, retailer), Rua das Chagas 17-1° Dto., Lisbon. WTD in prep.

27316—PORTUGAL—Art books. Livros Horizontes, Lda. (imp., retailer), Rua das Chagas 17-1° Dto., Lisbon. WTD in prep.

General commercial printing

27519—PORTUGAL—Art reproductions, picture prints. Livros Horizontes, Lda. (importer, retailer), Rua das Chagas 17-1° Dto., Lisbon. WTD in prep.

Industrial chemicals

28120—PHILIPPINES — Alkalies, chlorine. Apollo Industrial Supply Co. (importer, dist., agent), Rm. 417 Mariwasa Bldg., 717 Aurora Blvd., Quezon City, P.O. Box 2425, Manila. WTD in prep.

28150—AFGHANISTAN—Leather dye. Mohammed Azam & Co., KG (importer, dist., mfr.), Charahi Sedarat, Kabul. WTD 5/71.

28150—PHILIPPINES—Cyclic intermediates, crudes. Apollo Industrial Supply Co. (importer, dist., agent), Rm. 417, Mariwasa Bldg., 717 Aurora Blvd., Quezon City, P.O. Box 2425, Manila. WTD in prep.

28160—PHILIPPINES — Inorganic pigments. Apollo Industrial Supply Co. (importer, dist., agent), Rm. 417, Mariwasa Bldg., 717 Aurora Blvd., Quezon City, P.O. Box 2425, Manila. WTD in prep.

28194—NEW ZEALAND — Fumaric acid. Hansells (New Zealand) Ltd., Attn: John Maunsell (dist., agent), Private Bag, Masterton. WTD 5/71.

Drugs

28331—VENEZUELA—Synthetic organic medicinal chemicals in bulk. Direct purchase & agency. Panquimica C.A. (dist., agent), Edificio Palmira, piso 7, Avenida Francisco de Miranda, Bello Campo, and Apartado 60732, Caracas. WTD 4/71.

28341—NETHERLANDS—Spasmolytical and chemo-therapeutical preparations. Exclusive sales reps. for Benelux countries. Dagra N.V., Attn: C. H. Bleeker (dist., mfr.), Verrijn Stuartweg 60, P.O. Box 171, Diemen. WTD 8/70.

28342—NETHERLANDS — Psycho-pharmaceuticals. Exclusive sales reps. for Benelux countries. Dagra N.V., Attn: C.H. Bleeker (dist., mfr.), Verrijn Stuartweg 60, P.O. Box 171, Diemen. WTD 5/71.

28348 — NETHERLANDS — Antibiotical preparations, similar pharmaceuticals. Exclusive sales reps. for Benelux countries. Dagra N.V., Attn: C. H. Bleeker (dist., mfr.), Verrijn Stuartweg 60, P.O. Box 171, Diemen. WTD 5/71.

Soap, detergents, cleaning preparations, perfumes, cosmetics

● **28400—HONG KONG** — White disinfectant fluid, 5,000 imp. gal., supplied in 5 gallon black steel double seamed export drums (min. 22 gauge), or preferably, square drums of the "CANPAC" type. All drums to be painted externally light brown with contents, gross weight and the mark 'HIK'. Delivery required in 5 equal consignments at 2 months intervals starting October 1971. Tenders are accepted only through Hong Kong agents, or by Crown Agents, London office in Washington, D.C. Tender No. PT/24/71; bid deadline June 25. Director of Government Supplies, Government Supplies Dept., Oil St., North Point, Hong Kong. Chemicals, Petroleum & Rubber Div., BDC-712, Dept. of Commerce, Washington, D.C. 20230 ★(202-967-3910). Review copy available at the Commerce Field Office, 11444 Federal Bldg., 450 Golden Gate Ave., San Francisco, Calif. 94102 (415-556-5868).

28411—ISRAEL—Soap and detergents. Ben-Zion Kichler (imp., dist., agent), P.O. Box 3225, Tel Aviv. WTD in prep.

28416—YUGOSLAVIA — Detergents, other chemicals, equipment for polluted sea surface cleaning. Delta, Attn: B. Marcic, Dir. (imp., agent), Uzarska br. 3, P.p. 378, 51001 Rijeka. WTD in prep.

28430—PHILIPPINES—Surface active, finishing agents. Apollo Industrial Supply Co. (importer, dist., agent), Rm. 417, Mariwasa Bldg., 717 Aurora Blvd., Quezon City, P.O. Box 2425, Manila. WTD in prep.

28445—GERMANY — Cosmetic preparations, articles suited for resale to drugstores, shops specializing in cosmetics, barbers, hairdressers, as well as department stores. Correspondence requested in German. M. Dub-Uebersee-Handel, Schoeler & Wehrberger (importer, dist.), 16b Laurentiusbergstrasse, P.O. Box 130, D-6972 Tauberbischofsheim. WTD 8/70.

Gum, wood chemicals

28612—PHILIPPINES—Dyestuffs. Apollo Industrial Supply Co. (importer, dist., agent), Rm. 417, Mariwasa Bldg., 717 Aurora Blvd., Quezon City, P.O. Box 2425, Manila. WTD in prep.

Agricultural chemicals

● **28700—BURMA**—Malathion (90% EC technical product 93/95%) 42,500 imp. gals. packed in 1 T.G. polyethylene jerrycans, aluminum containers or steel drums; malathion (90% EC technical product 93/95%) 42,500 I.G., packed in 5 I.G. polyethylene jerrycans, aluminum containers or steel drums; endrin (19.5% EC) 63,000 I.G., packed in 1 I.G. polyethylene jerrycans, aluminum containers or steel drums; endrin (19.5% EC) 63,000 I.G., packed in 5 I.G. polyethylene jerrycans, aluminum containers or steel drums; D.D.T. (25% EC) 51,500 I.G. packed in 1 I.G. polyethylene jerrycans, aluminum containers or steel drums; D.D.T. (25% EC) 51,500 I.G. packed in 5 I.G. polyethylene jerrycans, aluminum containers or steel drums; sevin (85% active ingredient carbaryl) 200 metric tons, packed in 25 kg. polyethylene lined fibre drums; and 100,000 meters of vinyl hose (4" inside diameter) in 100-meter lengths packed in cloth bag and repacked in wooden case. Tender No. ARDC(F) 1971/72(1); bid deadline June 30. Chief Executive Officer, Agriculture (1), Agricultural and Rural Development Corp., 459 Prome Rd., Rangoon. Chemicals, Petroleum & Rubber Div.-712, Dept. of Commerce, Washington, D.C. 20230 ★(202-967-3910). Review copy available at the Commerce Field Office, 11444 Federal Bldg., 450 Golden Gate Ave., San Francisco, Calif. 94102 (415-556-5868).

28712—NEW ZEALAND—Fertilizer, approximately 10-18-8 (nitrogen-phosphate-potash) for feed corn. D. W. Tulloch & Co. Ltd., Attn: G. Tulloch (agent, retailer), P.O. Box 200, Masterton. WTD 6/70.

Chemical products

28911—AFGHANISTAN—Leather finishing agents, chemicals (leather softeners). Mohammed Azam & Co., KG (importer, dist., mfr.), Charahi Sedarat, Kabul. WTD 4/71.

28993—YUGOSLAVIA — Waterproofing, sealing compounds. Delta, Attn: B. Marcic, Dir. (importer, agent), Uzarska br. 3, P.p. 378, 51001 Rijeka. WTD in prep.

Petroleum refining

● **29100—BURMA**—Myanma Oil Corp., P.O. Box 1049, Rangoon, issued a tender for approximately 22,500 long tons (+ or —10%), marine fuel oil to reach Rangoon in August 1971, January 1972 and July 1972. Specific gravity at 60°/60°F max. 960 viscosity Redwood I at 100°F min. 300/max. 600. (MOC) Myanma Oil Corp. Tender YAUNG/HPYANT/MFO/71-72 dated May 17, 1971; bid deadline June 30. Further information may be obtained from Petroleum & Coal Program, BDC-714, Dept. of Commerce, Washington, D.C. 20230 (202-967-2355).

● **29100—BURMA** — Myanma Oil Corp., P.O. Box 1049, Rangoon has issued a tender for approx. 8 million imp. gal. of various types of lubricating oils and greases. (MOC) MYANMA Oil Corp. Tender YENAN/YAUNG/SA/HSA/8; bid deadline June 30. Petroleum & Coal Program, BDC-714, Dept. of Commerce, Washington, D.C. 20230 ★(202-967-2355).

Plastic products

30796—JAMAICA—Pipes; plastic, ductile. Specifications: Super bell; mechanical and Tyton joints; 4", 6", 8", 10", 12". Quotations c.i.f. Kingston R. A. Dalton, Supt. of Roads & Works (local government agency), Clarendon Parish Council, May Pen, Clarendon.

Boot, shoe cut stock, findings

31310—AFGHANISTAN — Leather shoe linings, shoe heels—finished wood. Mohammed Azam & Co., KG (importer, dist., mfr.), Charahi Sedarat, Kabul. WTD 5/71.

Abrasive, asbestos products

32922—BRAZIL—Asbestos friction brake linings for turbines plaited with metal. Requests quality samples directly from manufacturers. Correspondence requested in Portuguese. Acessorios Rex Ltda. (importer, dist., retailer), Avenida Prestes Maia 530, Sao Paulo, SP. WTD 4/71.

Steel mill products

33126—JAMAICA—Pipes; cast iron. Specifications: Super bell; mechanical and Tyton joints; 4", 6", 8", 10", 12". Quotations c.i.f. Kingston. R. A. Dalton, Supt. of Roads & Works (local government agency), Clarendon Parish Council, May Pen, Clarendon.

33167—GERMANY — Cold-rolled steel strip, stainless, appr. 6/100 inch thick, coated with neoprene layer of about 8/100 in. thickness; 3 or 4 shipments per yr. each of about 4 tons; price c.i.f. North Sea harbor. Correspondence requested in German. Otto Bauckhage, Metallwarenfabrik (dist., mfr.), 5874 Herscheid, Postfach 51, Attn: Hans-Werner Bauckhage. WTD in prep.

Rolling, drawing, extruding of nonferrous metals

● **33500 — HONDURAS** — Line conductors, shield wire, armor rods for construction of transmission and sub-transmission lines in several locations in Honduras as part of the extension project of the interconnected central system of the Empresa Nacional de Energia Electrica (ENEE). Tender No. E-IV-302, bid deadline June 28. Contact Empresa Nacional de Energa Electrica (ENEE), Apartado Postal No. 99, Tegucigalpa, D. C. Honduras.

33524—JAMAICA—Rails, aluminum for use as portable, collapsible market stalls. Quotations c.i.f. Kingston. R. A. Dalton, Supt. of Roads & Works (local govt. agency), Clarendon Parish Council, May Pen, Clarendon.

General hardware

34291 — ISRAEL — Motor vehicle hardware, including lock units, door and window handles, window regulators, hinges, license plate brackets, instrument panel knobs, etc. Direct purchase and/or representation. Avimat Ltd.—Import-Export Agency (importer, dist., agent), 4 Hanegev St., Tel Aviv. WTD in prep.

Fabricated structural metal products

34443 — CANADA — Concrete forming equipment and/or systems: steel, and/or steel, wood, fiberglass for concrete construction applications. Anthes Equipment Ltd., Div. of Molson Industries, J. L. Randall, Mgr., New Business Development (dist., retailer), 100 Dixie Plaza, Port Credit, Ontario. WTD 2/70.

34492—YUGOSLAVIA — Prefabricated metal parts, panels for buildings (especially aluminum). Delta, Attn: B. Marcic, Dir. (importer, agent), Uzarska br. 3, P.p. 378, 51001 Rijeka. WTD in prep.

Engines, turbines

● **35100 — ARGENTINA** — Supply two gas turbines, 15 mw each, outdoor type with ancillary equipment. Tender No. LI-32270; bid deadline June 30; IDA financing. Specifications available for approx. $38 from Compania Italo Argentina de Electricidad, S.A., San Jose 140, 4TO. Piso, Buenos Aires. One copy of specifications available for reference at the Power Equipmbent Program, Rm. 5886C, BDC, Dept. of Commerce, Washington, D.C. 20230.

● **35100—NEW ZEALAND**—Supply and deliver two 110,000 hp. turbines for direct coupling to vertical type generators rated for continuous output of 80 mw, 88.9 mva, 3-phase, 50-cycle. Tender No. 565; bid deadline Aug. 31. Secretary, Tenders Committee, New Zealand Electricity Dept., P.O. Box 12144, Wellington North, New Zealand. Specifications available from the Power Equipment Program, Rm. 5886C, BDC, Dept. of Commerce, Washington, D.C. 20230 ★(202-967-4241).

35195 — YUGOSLAVIA—Outboard motors 3 hp thru 200 hp. Delta, Attn: B. Marcic, Dir. (importer, agent), Uzarska br. 3, P.p. 378, 51001 Rijeka. WTD in prep.

Farm machinery

35222—FRANCE—Sprayers for irrigation. Perrot-France (dist., mfr., retailer), 70 rue Jean Jacques Rousseau, 78-Houilles. WTD 4/70.

35228—PAKISTAN—Farm poultry equipment, including attachments: two units incubator each with capacity of holding 100,000 eggs, related equipment. Modern Poultry Farms (dist.), Hassan Parwana Rd., Multan. WTD 5/71.

Construction, mining, materials handling machinery, equipment

● **35300—KOREA**—Two hydraulic excavators (backhoe) crawler type, two crawler tractors with straight blade, one air compressor with diesel engine and standard equipment with compressed air pressure $5Kg/cm^2$. Tender No. MIB-ADB-89; bid deadline 1100 hours July 3, 1971. Technical Services Department, the Medium Industrv Bank (MIB), 36 2-ka, Uichi-ro, Chung-Ku, Seoul. Tender will be financed by ADB through the Medium Industry Bank which handles this tender for the purchaser, Tai Sung Stone Industrial Co., Ltd., 95-1, Cho-dong, Chung-ku, Seoul. Tender documents available on short term loan from the General Industries Div. BDC-772, Dept. of Commerce, Washington, D.C. 20230 (202-967-4317).

● **35300—THAILAND** — Wolfram ore dressing plant, including magnetic separator, high tension separator, mineral jig. Plant should process four tons of 20 percent WO3 ore per day with expected one plus tons per day final dressed product. Steve Knoya, Mgr., Minerals Dept., Ekman's Co., Soi 31, Shukhumvit, Bangkok.

● **35300—TURKEY**—Tricone rock bits (Hughes W7R or equivalent) including 60 units (7.⅝ inches), 250 units (9.⅝ inches), 540 units (12.¼ inches), 150 units (15 inches), 100 units (17.½ inches) in diameter. Also drill bits (Acme 108AA or equivalent) 60 units (4 inches), 100 units (6 inches), 200 units (8 inches, 200 units (10 inches), 200 units (12 inches) in diameter. Also 60 pieces drill collars and 20 pieces drilling jars (Acme 107AA or equivalent). No tender number specified; bid deadline June 30. State Hydraulic Works (Dsi-Devlet Su Isleri Genel Mudurluga, Idara, Ve Mali Isler Dairesi Baskanligi) Anafartalar Ishani, Kat 10, Ulus, Ankara.

35310—JAMAICA—Motor road grader with ripper (E.12); road roller (7-10 ton); shovel loader, wheel tractor (2 cu. yd.). Construction, road maintenance machinery catalogs. Quotations c.i.f. Kingston. R. A. Dalton, Supt. of Roads & Works (local government agency), Clarendon Parish Council, May Pen, Clarendon.

Metalworking machinery

35453 — ISRAEL — Chucks, drill/lathe/others; tools and toolroom specialties. Direct purchase and/or representation. Avimat Ltd.—Import-Export Agency (importer, dist., agent), 4 Hanegev St., Tel Aviv. WTD in prep.

Special industry machinery

35511—NETHERLANDS — Pasteurizers, sterilizers for dairy plants; similar dairy plant equipment. Reps. for Europe. N.V. Machinefabriek Terlet, Attn: H. van Dort (importer, dist., mfr.), Oostzeestraat 6, P.O. Box 62, Zutphen. WTD in prep.

35512—NETHERLANDS—Mixing equipment for foodstuffs industry. Reps. for Europe. N.V. Machinefabriek Terlet, Attn: H. van Dort (importer, dist., mfr.), Oostzeestraat 6, P.O. Box 62, Zutphen. WTD in prep.

35513—ARGENTINA — Machinery for manufacturing skinless frankfurters, capable of producing 10-15 tons per day. Correspond in Spanish. Pedro Hermanos S.A.I.C.I.F.A. (mfr.), Av. Corrientes 1386, Buenos Aires. WTD in prep.

35513 — EL SALVADOR — Small pilot plant for processing cashew nuts, capacity for 100 lbs. per day. Should include cashew nut extractor, sheller, cracker, roaster, salting machine, vacuum canning machine, illuminated display counter. Ricardo Ruiz (agent), Apartado Postal 694, San Salvador. WTD in prep.

35513—NETHERLANDS—Food preserving equipment such as pasteurizers, ultrapasteurizers, sterilizers, heat-dryers, etc. Reps. for Europe. Machinefabriek Terlet, Attn: H. van Dort (importer, dist., mfr.), Oostzeestraat 6, P.O. Box 62, Zutphen. WTD in prep.

35513—URUGUAY—Dehydrated mashed potato turn-key installation. Quality control testing lab, unsupported plastic film packing machinery. Cooperativa Agropecuaria Ltda.—CALINCCO (mfr.), Casilla de Correo 233, Montevideo. WTD 5/71.

35521—JAMAICA—Textile dyeing machinery. Price c.i.f. Kingston. Reva Garments Co. Ltd., Attn: Ralph Bardowell (importer, mfr.), 209 Tower St., Kingston. WTD 5/71.

35522 — ISRAEL — Cloth-spreading machine. Radex Industries Ltd. (dist., mfr.), P.O. Box 6165, Tel Aviv. WTD in prep.

35522 — JAMAICA — Textile machinery for making knitted underwear. Price c.i.f. Kingston. Reva Garments Co. Ltd., Attn: Ralph Bardowell (importer, mfr.), 209 Tower St., Kingston. WTD 5/71.

35531 — JAMAICA — Woodworking machinery: mortiser (new), profile shaper (new or reconditioned) to shape 500 wooden chair legs per day. Specifications: 50-cycle, 220 V, single or three phase. Quotations c.i.f. Kingston. C. P. & W. Woodwork Industry Ltd. Attn: Mrs. Marina Watt (dist., mfr.), 10 Payne Ave., Kingston 11. WTD in prep.

35550 — JAMAICA — One machine for manufacturing open-end envelopes. Specifications: size range of 4" x 9" to 12" x 15"; preferably with printing attachment, new or second-hand. Quotations c.i.f. Kingston. Phoenix Printery Ltd., Attn: Stafford deMercado (mfr., retailer), 112e Church St., Kingston. WTD in prep.

35590—JAMAICA—Molding, laminating machines to mold, laminate formica in manufacturing kitchen cabinets. Quotations c.i.f. Kingston. R. T. Isaacs & Co. Ltd., Attn: Mark P. Isaacs (dist., agent, retailer), P.O. Box 418, Kingston. WTD 12/70.

35592 — MEXICO — Pipe coupling manufacturing machinery (38" to 2" in diameter) with production capacity of from 3,000 to 5,000 couples per 8 hr. shift. Esteban Hernandez Maldonado (importer, agent), Mina Sur 929 Despacho 205, Monterrey, N.L. WTD in prep.

35593—BRAZIL — Machines to manufacture plastic binding combs for bookbinding industry. Importadora Andreense Ltda. (importer, dist., retailer), Rua Rio Grande do Norte 513, Santa Terezinha, Santo Andre, SP. WTD 5/71.

35594—THAILAND—Automatic machinery for manufacturing clutch plates, capacity 100 pieces, 8 hrs. a day; and for manufacturing contact sets, capacity 1,000 pieces, 8 hrs. a day. Requests catalogs, c.i.f. Bangkok prices. Siam Mercantile (1960) Co. Ltd. (importer, dist.), S.M.C. Bldg., 117 Suriwongse Rd., Bangkok. WTD 1/71.

35595—AFGHANISTAN—Shoe manufacturing equipment for small scale operation, new or used. Full set leather treatment equipment, curing, dyeing, finishing. Mohammed Azam & Co., KG (importer, dist., mfr.), Charahi Sedarat, Kabul (P.O. Box N.A.). WTD 4/71.

35595—HONDURAS—Machinery, equipment to manufacture suitcases, briefcases. Requests offers, prices. Taufick M. Mourra, Bazar America (importer, mfr., retailer), Apartado Postal 253, 6a. Calle 611, Tegucigalpa. WTD 5/70.

35595—MEXICO—Broom manufacturing machinery, related equipment: three bumpers (broomcorn shakers) production capacity of 350 kg. per 8 hr. shift each; two broomcorn selectors production capacity of 250 kg. each; one broomcorn baler which bales 130 kg. of broomcorn per bale; six broom making machines production capacity of 120 brooms per 8 hr. shift each; two broom sewing and tying machines production capacity of 250 brooms per 8 hr. shift each, one lot of spare parts for servicing all above 14 machines needed. Banco Agrario de la Laguna, S.A., c/o. Ing. Alfonso Franco Garcia (importer, mfr.), Morelos Pte. 947, Torreon, Coahuila. WTD in prep.

General industrial machinery

35641—ITALY—Four centrifugal fans: total pressure ratio 1:13; volumetric flow: 200 ft. 3/sec.; efficiency: 80%; external diameter smallest possible (not to exceed one meter). External dimensions, weight, delivery time, price urgently needed for a tracked air-cushion vehicle project. Istituto di Aeronautica Universita' di Palermo (teaching, research institute), Viale delle Scienze, 90128 Palermo. WTD 4/71.

Special Action

Each of the following trade notices is deemed to rate the special attention of American manufacturers and suppliers by the U.S. Commercial Officers overseas.

30113 — SWITZERLAND — Tires for all kinds of airplanes, industrial vehicles, trucks. City Pneu AG, Attn: R. W. Greter (dist., agent), Schaffhauserstrasse 210, P.O. Box 312, 8057 Zurich. WTD in prep.

30697 — SWITZERLAND — Capillary tubes; diameter, 1.8mm.; tolerance ± 10 micrones; length 20 to 30 centimeters. Urgent need. Ciba-Photo Chemicals, Attn: Dr. Stark, Industrie-Strasse 14, 1700 Fribourg. WTD in prep.

36230 — SWITZERLAND — One unit electron beam machining equipment performing perforation thin metal sheets of about 1 mm. thickness. Diameter perforated holes to be in range of 0.5 mm. to 1 mm. Perforation frequency at least 3 khz. Electron beam machine equipment consists of electron beam assembly; housing. Electron beam assembly includes electron gun with complete system for beam deflection & focusing plus vacuum equipment and instrumentation; electric installation consisting of high voltage equipment for electron acceleration, power supplies, pulse generators, oscilloscopes; process control computer self-sufficient for drilling programs. Housing, other parts to include vacuum chamber to 40 cu. ft. volume as working space, vacuum system including electrical equipment, optical system for checking, positioning. Requests prices, delivery schedules, technical specifications. Landis & Gyr, SA, Attn: Dr. J. Moser, Head, Physics Laboratory, Dept. ZL 2866 (mfr.), 6301 Zug. WTD 10/70.

37141—SWITZERLAND — Fellies for automobiles, trucks, industrial vehicles, similar applications. City Pneu AG, Attn: R. W. Greter (dist., agent), Schaffhauserstrasse 210, P.O. Box 312, 8057 Zurich. WTD in prep.

35642—JAMAICA—Dust collector system, individual machine units or central unit system required to remove sawdust from furniture factory work area. Technical literature requested. Specification: Electrical equipment requires 50-cycle, 220 V, single or three phase abilities. Quotation c.i.f. Kingston. C. P. & W. Woodwork Industry Ltd., Attn: Mrs. Marina Watt (dist., mfr.), 10 Payne Ave., Kingston 11. WTD in prep.

35690 — ISRAEL — Packaging/wrapping machine, automatic or semi-automatic for disposable briefs; capacity: 15-20,000 briefs per 8 hrs. Radex Industries Ltd. (dist., mfr.), P.O. Box 6165, Tel Aviv. WTD in prep.

Office, computing, accounting machines

● **35700—MALTA**—The supply and maintenance of a computer, for the improvement of operations in the Central Office of Statistics and other agencies. Bid deadline September 9. Tender documents available from The Treasury, The Palace, Valletta, Malta. A fee of $4.80 charged for every four copies of the documents. Tenders are to be submitted in duplicate.

Service industry machines

35892 — GERMANY — Water treatment units as well as control valves, timers, etc. for water filters. Chemie und Filter GmbH (importer, mfr., exporter), 27 Albert Fritz-Strasse, P.O. Box 467, D-6900 Heidelberg. WTD 8/70.

35892—YUGOSLAVIA—Garbage disposers, commercial systems. Delta, Attn: B. Marcic, Dir. (importer, agent), Uzarska br. 3, P.p. 378, 51001 Rijeka. WTD in prep.

Electric transmission, distribution equipment

● **36100—ALGERIA**—SONELGAZ, The State Enterprise, has announced the construction in 1971 and 1972 of about 12 transformer stations (60/30kv and 220/60kv). Interested firms should inform SONELGAZ, Dept. Ligues et Postes, Direction de L'equipement electrique, 2, bd. Salah Bouakouir, Algiers, and send references and information on their capabilities by July 1.

● **36100—ARGENTINA**—Supply of electric meters, single phase, 3-phase, and special type for AC. Tender No. LI 2883; bid deadline June 28. Terms and specifications available for 50 Argentine pesos each (4.12 Arg. pesos equals U.S. $1.). Compania Italo Argentina de Electricidad S.A., San Jose 140, 4 TO Piso, Buenos Aires.

● **36100—COLOMBIA**—Supply of bronze water meters, cast or stamped, ½ or ⅝ inches, ¾ inches, 3 inches, 4 inches, and 6 inches; also bronze accessories, cast or stamped, for housing connections. Tender No. BM-005-A; bid deadline July 1. Specifications are available, at 1,000 Colombian pesos per set (19.66 Col. pesos=U.S. $1), from the Secretaria de la Direccion de Acueducto y Alcantarillado, Banco Industrial Colombiano, Piso 6, Cali.

● **36100—NEW ZEALAND**—Supply two 30-mva 220-110/11 kv 3-phase transformers or two 30-mva 220-110/11 kv transformers banks and spare unit. Tender No. 567; bid deadline June 29. Secretary, Tenders Committee, New Zealand Electricity Dept., P.O. Box 12144, Wellington, North New Zealand. Specifications available from the Power Equipment Program, Rm. 5886C, BDC, Dept. of Commerce, Washington, D.C. 20230 ★(202-967-2175).

● **36100—PERU**—Supply approximately 7,300 each units of 25 different types of accessories for transformers such as load break connectors, bushings, stand-off plugs, three way plugs, sand fuses, low voltage breakers and plastic insulating material. Tender No. PD-101. Urgent delivery. Specifications available for approx. $10 from Servico de Compras, Oficina 306, Empresas Electricas Asociados, Conde de Superunda 261, P.O. Box 1384, Lima. Copy of specifications available for reference at the Power Equipment Program, Rm. 5886C, BDC, Dept. of Commerce, Washington, D.C. 20230 ★(202-967-4241).

● **36100—TRINIDAD**—Supply of self-contained 3-phase 4-wire star 400/230 V and 115/230 V bottom connected watt-hour meters; also current transformer operated 4-wire delta 115/230 V bottom connected watthour meters; also current transformer operated 3-phase 4-wire delta 115/230 V bottom connected kva of maximum demand meters for on-peck operation. Tenders No. 2224 through 2230; bid deadline July 27. Invited by the Purchasing Officer, Trinidad and Tobago Electricity Commission, 63 Frederick St., Port of Spain, Trinidad, W.I. Terms and specifications available on loan from the Business & Scientific Equipment Div., BDC-708, Dept. of Commerce, Washington, D.C. 20230 ★(202-967-2939).

Electrical industrial apparatus

● **36200—ECUADOR**—Supply diesel electric power plant of 8,500 to 9,900 kw, bidding alternatives are three units of 600 rpm (8,550 to 9,900 kw) or 3 to 4 units of 720 to 900 rpm (8,500 to 9,900 kw). Units to be stationary type on rollers, also control panels, 43,800 volt transformers and all auxiliary equipment. Bid deadline June 30; IBRD financing. Specifications available for $12 from the Subgerencia, Empresa Electrica Quito, S.A., 3 Piso, Avenida 10 de Agosto y Los Casas, Quito.

36210 — ARGENTINA — Wind-powered electric generators with capacity of 1,000 KW. Correspondence requested in Spanish. Sociedad Cooperativa de Luz y Fuerza e Industrias Anexas de Ingeniero Jacobacci Ltda. (private electric utility), Ingeniero Jacobacci, Province of Rio Negro. WTD in prep.

Electric lighting, wiring equipment

● **36400—PERU**—Supply suspension insulators, hardware for transmission line from Chimbote to Trujillo. Item 3, Transmission Line Project; bid deadline June 16. IBRD bank loan No. 189/OC-PE. Specifications available for $60 from The Corporacion Peruana Del Santa, Jiron Augusto N. Wiese No. 831, Lima.

Radio, television receiving sets

36515—NETHERLANDS — Audiovisual equipment, hardware only. Exclusive reps requested for Netherlands, Eastern Europe. L.P.J. Holzhaus/TSI Nederland (importer, dist.), Nieuwe Prinsengracht 25-27 Amsterdam. WTD 5/71.

Communications equipment

● **36600—TURKEY**—Supply of a 600 line private automatic branch exchange or equivalent. Bid deadline July 14. A copy of specifications may be obtained from Modern Translation Bureau, Karanfil Sokak 49/1, Ankara, for $16.

36622—ISRAEL—Television closed circuit equipment; television on cassettes; training aids/devices-audiovisual for classrooms, laboratories. Teles Systems Ltd. (importer, dist., mfr. of educational aids), 88 Giborei Israel St., Tel Aviv. Cable address: Elcoris Telaviv. Telex: 033-578. WTD in prep.

36625—NETHERLANDS—Echo sounders (sonar equipment), similar navigational aids for sporting boats. Exclusive reps. for Benelux countries. Interboat-Holland, Attn: J. A. Keune (importer, dist.), Oud-Loosdrechtsedijk 169a, Loosdrecht. WTD in prep.

Electronic components, accessories

36790—GERMANY—Electronic components for equipment in fields of data processing, numerically controlled machinery, telecommunication, telecontrol. Ebeko-Elektronik GmbH & Co. KG (importer, mfr.), 8 Bahnhofstrasse, D-7601 Urloffen, Kreis Kehl, Baden-Wuerttemberg. WTD 10/70.

36795—JAPAN—Copper clad laminated paper-phenolic for printed circuit board, NEMA Grade FR 2 and UL Grade SE-1. Quote prices f.o.b. U.S. ports. Japan Circuit Industrial Co., Ltd. (mfr.), 1236 Kamiike-cho 2-chome, Toyota City. WTD 11/70.

Electrical machinery, equipment,

36920 — ARGENTINA — Batteries, primary, for use in heart pacemaker. Correspondence requested in Spanish. Delver-Laboratorios Electronicos (mfr.), Calle 3 No. 1520, La Plata, Pcia. de Buenos Aires. WTD in prep.

Motor vehicles, equipment

37113—THAILAND—Luxury buses for up-country tours, right hand drive, air-conditioner, 30 to 40 seats, one toilet room, PA system. Requests catalogs, c.i.f. Bangkok prices. World Travel Service Ltd., Attn: Mr. Kusa Panyarachun, Managing Dir. (travel agency), 1053 New Rd., Bangkok. WTD in prep.

Engineering, laboratory, scientific, research instruments

● **38100—ECUADOR**—Supply of equipment for the School of Engineering, Escuela Politecnica Nacional (National Polytechnic School), Quito, including automatic processing and control instruments for laboratories; glass material; petroleum, chemical, and synthetic fibers for laboratories; cinematic and photographic equipment; petrographic apparatus. Tender No. 1/EQ/BID/FQ; bid deadline June 11. Terms and specifications may be obtained from the above address in Quito. One set in Spanish is available for review at Rm. 2329, BDC-708, Dept. of Commerce, Washington, D.C. 20230.

● **38100 — KOREA** — Supply of centrifuges, rotors, incubators, autoanalyzer, deep freezers, evaporator, hot plate, and more. Tender No. SLC-71077-PII; bid deadline June 30. Invited by the Office of Supply, Government of the Republic of Korea, Seoul. Terms and specifications available on loan from the Business & Scientific Equipment Div., BDC-708, Dept. of Commerce, Washington, D.C. 20230 ★(202-967-2939).

Photographic equipment, supplies

● **38600—GREECE**—Supply of 1,355,000 sheets of X-ray film in various dimensions; 28,000 sheets of X-ray dental film in various dimensions. Tender No. 49004/3.5. 1971; bid deadline June 30. Invited by Directorate of Supplies, Institute of Social Insurance, 8 Aghiou Konstantinou St., Athens. Terms and specifications available on loan from the Business & Scientific Equipment Div., BDC-708, Dept. of Commerce, Washington, D.C. 20230 ★(202-967-2939).

38611—ISRAEL—Projectors, slide film/strip film/image, etc. including overhead projectors. Teles Systems Ltd. (importer, dist., mfr.), 88 Giborei Israel St., Tel Aviv. Cable: ELCORIS TELAVIV, Telex: 033-578. WTD in prep.

38613—NETHERLANDS — Audiovisual equipment, hardware only. Exclusive reps. for Netherlands, Eastern Europe. L.P.J. Holzhaus / TSI Nederland (importer, dist.), Nieuwe Prinsengracht 25-27 Amsterdam. WTD 5/71.

Toys, amusement, sporting goods

39410—CANADA—Educational toys. Direct purchase & agency. Inov Importex Inc. (importer, dist., mfr.), 356 Wellington S., Sherbrooke, Quebec. WTD in prep.

Agencies

Specific foreign firms have expressed interest in agency agreements for the products listed below. Exclusive agencies for these products are wanted only if specified.

Canning, preserving foods

20338—SWITZERLAND—Dietetic food specialities for babies. SA Adroka AG, Attn: Messrs. Berger & Buser (mfr., agent), Nauenstrasse 63, 4002 Basel. WTD. 4/71.

20370—NETHERLANDS ANTILLES—Frozen fruits, vegetables. Exclusive agency. Blok & Diaz N.V. (importer, agent), Majoorsweg 10, Curacao. WTD 12/70.

Confectionery

20730—SWITZERLAND — Brand-name, packaged chewing-gum. Requests offers from mfrs. only. Barbezat & Cie., Attn: J.E. Hardmeyer (importer, dist., mfr.), 2114 Fleurier. WTD 3/70.

Beverage industries

20850 — CANADA — Bourbon, rum, U.S. wine. Cy Brown (agent), 76C Allandale Rd., St. John's, Newfoundland. WTD in prep.

Food preparations

20990—AUSTRALIA—Food. Allied Mills Ltd., Attn: R. L. Thomas, Mkt. Res. Mgr. (importer, mfr., agent), 2 Smith St., P.O. Box 1, Summer Hill, Sydney, NS.W. 2130. WTD 4/71.

Yarn, thread mills, products

22811—VIETNAM—Cotton yarn for textile weaving. Nguyen Mui Trading (agent), 154 Gia Long, Saigon. WTD in prep.

22814 — BELGIUM — Garnetted threads, synthetic. Etablissements Leon Delrue S.P.R.L. (importer), 22-32 Rue Saint Remacle, 4800 Verviers. WTD 5/71.

22841—VIETNAM—Thread mills products including sewing, crochet, darning, embroidery, tatting, hand knitting, other handicraft threads. Nguyen Mui Trading (agent), 154 Gia Long, Saigon. WTD in prep.

Textile goods

22910—KOREA—Felt goods (blankets) for paper mills. Korea Pollution Preventive Corp. (KPPC) (dist., agent, engineer of pollution control), K.P.O. Box 207, Seoul. WTD 12/70.

22940 — BELGIUM — Waste, synthetic, substandard. Etablissements Leon Delrue S.P.R.L. (importer), 22-32 Rue Saint Remacle, 4800 Verviers. WTD 5/71.

Women's, misses', juniors' outerwear

23350 — CANADA — Women's dresses, pant suits. Adanac Import Commodities (importer, dist., agent), No. 800-207 W. Hastings St., Vancouver, B.C. WTD in prep.

Women's, misses', children's, infants' under garments

23410—CANADA — Women's lingerie. Adanac Import Commodities (importer, dist., agent), No. 800-207 W. Hastings St., Vancouver, B.C. WTD in prep.

Converted paper, paperboard products

26440—VENEZUELA—Wallpaper; machine printed, hand painted. Correspondence requested in Spanish. Pedro Duran Vernet (Empresa Diamante) (agent), Apartado 2545 Carmelitas, Caracas 101. WTD 1/71.

General commercial printing

27519—GERMANY—Cigar labels, decalcomanias for cigars, cigarillos. Correspondence requested in German. Blauband Zigarren & Stumpen-Fabriken (exporter), D-7701 Watterdingen, Kreis Konstanz a. Bodensee. WTD 3/71.

Industrial chemicals

28190—PAKISTAN—Bronze powder for use in lithographic process, chemicals for deep-etch process. Sh. Ala-ud-Din, Lalla & Co. (importer, dist., agent), Hospital Rd., Lahore. WTD 5/71.

Synthetic materials

28210 — VIETNAM — Plastic materials, synthetic resins, nonvulcanizable elastomers. Nguyen Mui Trading (agent), 154 Gia Long, Saigon. WTD in prep.

Drugs

28341 — SWITZERLAND—Ovulation retarding preparations for human use; preparations acting against multiple sclerosis. SA Adroka AG, Attn: Messers. Berger & Buser (mfr., agent), Nauenstrasse 63, 4002 Basel. WTD 4/71.

28345 — SWITZERLAND—Pharmaceuticals in form of tablets for diabetes. SA Adroka AG, Attn: Messrs. Berger & Buser (mfr., agent), Nauenstrasse 63, 4002 Basel. WTD 4/71.

28346 — SWITZERLAND — Baby care creams, powders, similar preparations acting on the skin. SA Adroka AG, Attn: Messrs. Berger & Buser (mfr., agent), Nauenstrasse 63, 4002 Basel. WTD 4/71.

Soap, detergents, cleaning preparations, perfumes, cosmetics

28416—VIETNAM—Industrial soap, detergents. Nguyen Mui Trading (agent), 154 Gia Long, Saigon. WTD in prep.

Paints, varnishes, lacquers, enamels

28510 — SWITZERLAND—Quality wood treatment, preserving preparations for inside, outside treatment; all kinds. Fritz Brand AG, Attn: Mr. Brand, Dir. (dist., agent), 3436 Zollbruck. WTD in prep.

28511 — THAILAND — Reflective liquid. Requests catalogs, c.i.f. Bangkok prices. S.M.V. Siam Enterprise Ltd. Partnership (importer, dist.), 12/6 Plabplachai Rd., Bangkok. WTD in prep.

28511 — VIETNAM — Paints, varnishes, lacquers, enamels, allied products. Nguyen Mui Trading (agent), 154 Gia Long, Saigon. WTD in prep.

Agricultural chemicals

28720 — VIETNAM — Natural (organic) and mixed fertilizers including urea, potassium sulfate, ammonium sulfate. Nguyen Mui Trading (agent), 154 Gia Long, Saigon. WTD in prep.

28790 — VIETNAM — Agricultural pesticides, other agricultural chemicals including disinfectants, pesticides, DDT, herbicides, fungicides, insecticides, rodenticides. Nguyen Mui Trading (agent), 154 Gia Long, Saigon. WTD in prep.

Fabricated rubber products

30691 — THAILAND — Belts, transmission, rubber, insulation, size 3-10 in. in roll of 300-400 yds. Requests catalogs, c.i.f. Bangkok prices. Thai Mui Import Ltd. Partnership (importer, dist., mfr.), 1620/4 Siangkong Rd., Bangkok. WTD in prep.

30697—SWITZERLAND—Rubber household gloves, nipples, pacifiers. Walter Anderegg Handelsagentur (importer, dist., agent), Dachslernstrasse 197, 8048 Zurich. WTD in prep.

30698 — SWITZERLAND — Baby pants, bathing, shower caps, balloons, balls, rubber toys. Walter Anderegg Handelsagentur (importer, dist., agent), Dachslernstrasse 197, 8048 Zurich. WTD in prep.

Plastic products

30798 — SWITZERLAND — Plastic infants' gift sets, kits, plastic gloves, novelties for sale in supermarkets, department stores. Walter Anderegg Handelsagentur (importer, dist., agent), Dachslernstrasse 197, 8048 Zurich. WTD in prep.

Structural clay products

32511—MEXICO—Brick. Marcel Abdo (importer agent), Ave. Constitucion Pte. 2233 3er. Piso, Monterrey, N.L. WTD 2/71.

32530—MEXICO—Ceramic tile for construction purposes. Marcel Abdo (importer, agent), Ave. Constitucion Pte. 2233 3er. Piso, Monterrey, N.L. WTD 2/71.

Cut stone products

32811—MEXICO—Facing stone for construction purposes. Marcel Abdo (importer, agent), Ave. Constitucion Pte. 2233 3er. Piso, Monterrey, N.L. WTD 2/71.

Abrasive, asbestos, nonmetallic mineral products

32950—ARGENTINA—Minerals, earths, clays, other raw materials for porcelain, refractory, sanitary ware industries. Correspondence requested in Spanish. Anberfaco S.A. (agent), Sarmiento 470, Piso 3°, Of. 312, Buenos Aires. WTD in prep.

Steel mill products

33121 — ARGENTINA — Materials for blast furnaces such as pig iron, iron scrap, blooms, billets, etc. Correspondence requested in Spanish. Anberfaco S.A. (agent), Sarmiento 470, Piso 3°, Of. 312, Buenos Aires. WTD in prep.

33125—SWITZERLAND—Steel wire of all kinds. SKF Kugellager AG, Attn: Olle Lindgren (dist., mfr.), Falkenstrasse 28, 8021 Zurich. WTD in prep.

33127—VIETNAM—Sheet and strip steel, cold and hot rolled, produced in steel mills. Nguyen Mui Trading (agent), 154 Gia Long, Saigon. WTD in prep.

33129—THAILAND—High carbon steel for making tools, molds. Requests catalogs, c.i.f. Bangkok prices, samples, heating and hardening instruction. Pinthong Import Ltd. Partnership (importer, dist.), 345-353 Mahapruttaram Rd., Bangkok. WTD in prep.

33167—SWITZERLAND—Steel sheets, strips, cold rolled. SKF Kugellager AG, Attn: Olle Lindgren (dist., mfr.), Falkenstrasse 28, 8021 Zurich. WTD in prep.

Rolling, drawing, extruding of nonferrous metals

33560—VIETNAM — Plate sheet and strip, lead, rolled, drawn and extruded non-ferrous metal. Nguyen Mui Trading (agent), 154 Gia Long, Saigon. WTD in prep.

33574—PAKISTAN — Telephone cables. Requests catalogs, quotations, c. & f., Karachi. Associated Electrical Enterprises (agent), 28, Bambino Chambers, Karachi. WTD in prep.

33578—PAKISTAN — Power cables. Requests catalogs, quotations, c. & f., Karachi. Associated Electrical Enterprises (agent), 28, Bambino Chambers, Karachi. WTD in prep.

Primary metal industries

33919—MEXICO—Forged iron items for construction purposes. Marcel Abdo (importer, agent), Ave. Constitucion Pte. 2233 3er. Piso, Monterrey, N.L. WTD 2/71.

Cutlery, hand tools, general hardware

34231—THAILAND—Hand tools such as wrenches, hammers. Requests catalogs, c.i.f. Bangkok prices. Pressure Container Industry Corp., Ltd. (importer, dist., mfr.), 79 Chueplerng Rd., Chongnonsee, P.O. Box 628, Bangkok. WTD 4/71.

Fabricated structural metal products

34411—VIETNAM—Iron and steel, fabricated structural for buildings. Nguyen Mui Trading (agent), 154 Gia Long, Saigon. WTD in prep.

34437—THAILAND — Oil storage tanks, metal nonpressure, capacity 1,000-10,000 tons, complete with equipment such as fittings, valves, meters, etc. Requests catalogs, c.i.f. Bangkok prices. Kachornyut Co. Ltd. (importer, dist.), 217 Sukhumvit 15, Bangkapi, Bangkok. WTD 4/71.

34492 — GUATEMALA — Metal silos for grain storage. A. Melville & Compania

Ltda. (importer, dist, agent), 7a. Avenida 10-69, Zona 1, P.O. Box 265, Guatemala City. WTD 5/71.

Farm machinery

35226 — NEW ZEALAND — Hay rake, tractor pulled, side delivery, roll bar type, approximately 9 ft. raking width. D. W. Tulloch & Co. Ltd., Attn: G. Tulloch (agent, retailer), PO. Box 200, Masterton. WTD 6/70.

35228—GUATEMALA—Tractors, sprayers, dusters; grain cleaning equipment, elevators. A. Melville & Compania Ltda. (importer, dist., agent), 7a. Avenida 10-69, Zona 1, P.O. Box 265, Guatemala City. WTD 5/71.

Construction, mining, materials handling machinery, equipment

35333 — THAILAND — Oil refinery machinery, equipment, 1-20 hp. Requests catalogs, c.i.f. Bangkok prices. Kachornyut Co. Ltd. (importer, dist.), 217 Sukhumvit 15, Bangkapi, Bangkok. WTD 4/71.

35361 — THAILAND— Hoists, electric chain. Requests catalogs, c.i.f. Bangkok prices. Thai Mui Import Ltd., Partnership (importer, dist., mfr.), 1620/4 Siangkong Rd., Bangkok. WTD in prep.

Metalworking machinery

35410—ISRAEL—Machine tools for boring/grinding machinery, all kinds. Arnold Trading Co. Ltd. (importer, agent), 17 Kikar Masarik, Tel Aviv. WTD 5/70.

35420—HONG KONG—Aluminum extrusion or explosive forming machines for manufacturing 2, 3, 4 and 5 cell flashlight cases. Machines should be capable of producing 1.2 million cases per mo. Robert W. Suez & Assoc. (consulting engineers), 4 Mile post, Tai Po Rd., MD 3, New Territories. WTD 4/70.

35421—GERMANY — Metalworking machinery, equipment, tools in particular suitable for heating installation, such as shearing and bending equipment for bending copper, iron, and plastic pipes etc., excluding machine tools. Berg & Schmid (importer, dist., agent), Wolframstrasse 48, D-7000 Stuttgart 1. WTD 7/70.

35481—ARGENTINA—Rolling mill machinery, equipment including furnaces, presses, converters, etc. Correspondence requested in Spanish. Anberfaco S.A. (agent), Sarmiento 470, Piso 3°, Of. 312, Buenos Aires. WTD in prep.

35484—SWEDEN—Automotive maintenance equipment, applicable at repair shops, safety features, etc. Soders Bilbargning AB (importer, agent, repair shop service operators), Box 49049, S-100 28 Stockholm 49. WTD 5/71.

Special industry machinery

35513 — DENMARK — Food packaging machinery, chanalizers with speeds up to 300 per min. Knud Grundtvig A/S (importer, dist., agent), 32 Syrefabriksvej, DK-2770 Kastrup. WTD 4/71.

35513—PERU — Sugar plant machinery; machinery for fishing industry. Richard O. Custer S.A. (importer, dist.), Av. Bolivar 2100, Pueblo Libre, Lima 21. WTD in prep.

35521—PERU—Textile machinery. Richard O. Custer S.A. (importer, dist.), Av. Bolivar 2100, Pueblo Libre, Lima 21. WTD in prep.

35521—VIETNAM—Textile machinery: shearing, examining, doubling, trademarking, brushing, rolling, whipping, tentering, willowing, warping, twisting, beaming, embossing, pre-shrinking, braiding, strip cutting machines. Nguyen Mui Trading (agent), 154 Gia Long, Saigon. WTD in prep.

35531—FINLAND—Machinery for making wooden toothpicks with triangular cross-cut. Oy Julius Tallberg Ab, Attn: Veikko Ikonen, Woodworking Machinery Dept. (importer, dist., agent), Aleksanterinkatu 21, 00100 Helsinki 10. WTD 11/70.

35552—PAKISTAN—Parts, attachments for linotype, monotype machines. Sh. Ala-ud-Din, Lalla & Co. (importer, dist., agent), Hospital Rd., Lahore. WTD 5/71.

35590—SWITZERLAND—Crystals extruding machine. Rotel AG, Attn: Mr. Schwaar (mfr.), Oltenerstrasse 985, 4663 Aarburg. WTD in prep.

35591—MEXICO—All types fertilizer plant equipment, accessories. Suministros Nacionales e Internacionales, S.A., Attn: Lou Leslie (dist.), Darwin 142, Mexico 5, D. F. WTD in prep.

General industrial machinery

35621 — VENEZUELA — Ball bearings. Correspondence requested in Spanish. Pedro Duran Vernet (Empresa Diamante) (agent), Apartado 2545 Carmelitas, Caracas 101. WTD 1/71.

35641—AUSTRALIA — Large industrial electric fans. Maddrell Bros. Pty. Ltd., Attn: D. J. McDonell (importer, dist., exporter), P.O. Box 103, 6-8 Orion Rd., P.O. Box 103, Lane Cove, N.S.W. 2066. WTD 4/71.

Office, computing, accounting machines

35791—GUATEMALA—Addressing, dictating, duplicating, other office machines. A. Melville & Compania Ltda. (importer, dist., agent), 7a. Avenida 10-69, Zona 1, P.O. Box 265, Guatemala City. WTD 5/71.

Service industry machines

35851 — GUATEMALA — Air-conditioning equipment, household and central system for buildings. Desires technical training in installation of equipment. Compania Guatemalteca de Aparatos Electricos, S.A. (importer, dist., agent), 10a. Calle 5-18, Zona 1, P.O. Box 148, Guatemala City. WTD 5/71.

35853—GUATEMALA — Reach-in, walk-in refrigerators, cooler display units, counters, similar items. Compania Guatemalteca de Aparatos Electricos, S.A. (importer, dist., agent), 10a. Calle 5-18, Zona 1, P.O. Box 148, Guatemala City. WTD 5/71.

35857—THAILAND—Auto airconditioners, parts. Requests catalogs, c.i.f. Bangkok prices. Davindra Co. Ltd. (importer, dist.), 69/8 Phyathai Rd., P.O. Box 2544, Bangkok. WTD in prep.

35860—THAILAND—Oil pumps, centrifugal type, capacity 440 gal. per min., speed 2,900 round per min. Requests catalogs, c.i.f. Bangkok prices. Kachornyut Co. Ltd. (importer, dist.), 217 Sukhumvit 15, Bangkapi, Bangkok. WTD 4/71.

35891 — GUATEMALA — Commercial cooking equipment for cafeterias: ranges, griddles, toasters, deep-fat fryers, coffee urns, pressure cookers—steam-electric and nonelectric. Compania Guatemalteca de Aparatos Electricos, S.A. (importer, dist., agent), 10a. Calle 5-18, Zona 1, P.O. Box 148, Guatemala City. WTD 5/71.

35892—BRAZIL—Sewer cleaning equipment. GEOVIA-Comercio e Engenharia S/A, Divisao Geohydro (importer, agent), Caixa Postal n° 1409-ZC-00, Rio de Janeiro-GB. WTD 5/70.

Machinery

35991—SWITZERLAND — Piston rings, other accessories, parts for marine, traction and stationary diesel engines. Nova Kolbenring AG, Attn: Mr. Gessler (mfr., agent), P.O. Box, 8307 Effretikon. WTD in prep.

Electric transmission, distribution equipment

36131—PAKISTAN—Switchgear including power switchgear assemblies, power circuit breaker. Requests catalogs, quotations, c. & f. Karachi. Associated Electrical Enterprises (agent), 28, Bambino Chambers, Karachi. WTD in prep.

Electrical industrial apparatus

36210 — AUSTRALIA — Electric motors all types. Maddrell Bros. Pty. Ltd., Attn: D. J. McDonell (importer, dist., exporter), 6-8 Orion Rd., Lane Cove, P.O. Box 103, N.S.W. 2066. WTD 4/71.

36210 — PAKISTAN — Generating sets, diesel/electric. Requests catalogs, quotations, c. & f. Karachi. Associated Electrical Enterprises (agent), 28, Bambino Chambers, Karachi. WTD in prep.

36212—AUSTRALIA—Flame proof motors for use in dangerous areas. Maddrell Bros. Pty. Ltd., Attn: D. J. McDonnell (importer, dist., exporter), 6-8 Orion Rd., P.O. Box 103, Lane Cove, N.S.W. 2066. WTD 4/71.

36290—VIETNAM—Electrical industrial apparatus including capacitors, condensers, transformers, voltage regulators. Nguyen Mui Trading (agent), 154 Gia Long, Saigon. WTD in prep.

Electric lighting, wiring equipment

36425—AUSTRALIA — Outdoor lighting equipment. Maddrell Bros. Pty. Ltd., Attn: D. J. McDonell (importer, dist., exporter), 6-8 Orion Rd., P.O. Box 103, Lane Cove, N.S.W. 2066. WTD 4/71.

Radio, television receiving sets

36511 — PAKISTAN — Radios. Requests catalogs, quotations, c. & f. Karachi. Modern Motors Ltd. (agent), Abdullah Haroon Rd., Karachi-3. WTD in prep.

36512—PAKISTAN—Television sets. Requests catalogs, quotations, c. & f. Karachi. Modern Motors Ltd. (agent), Abdullah Haroon Rd., Karachi-3. WTD in prep.

36514—PAKISTAN—Recordplayers. Requests catalogs, quotations, c. & f. Karachi. Modern Motors Ltd. (agent), Abdullah Haroon Rd., Karachi-3. WTD in prep.

Communication equipment

36623 — THAILAND — Burglar alarms. Request catalogs with technical details, c.i.f. Bangkok prices. Device Trading Ltd. Partnership (importer, dist., agent), 222/11-13 Larn Luang Rd., Bangkok. WTD 4/71.

36625—GERMANY—Spare parts for radar systems. Prices c.i.f. Hamburg or

Bremen. Fred Trommeschlaeger Elektronik Bauelemente (dist.), 120 Heisterbacher Str., 533 Koenigswinter. WTD 2/71.

Electrical machinery, equipment, supplies

36944—THAILAND—Spark plugs, automotive type. Requests catalogs, c.i.f. Bangkok prices. Pressure Container Industry Corp., Ltd. (importer, dist., mfr.), 79 Chueplerng Rd., Chongnonsee, P.O. Box 628, Bangkok. WTD 4/71.

36992—SWITZERLAND—Christmas tree lighting sets, electric, 220 V, 50-cycle. Walter Anderegg Handelsagentur (importer, dist., agent), Dachslernstrasse 197, 8048 Zurich. WTD in prep.

Motor vehicles, equipment

37130—IRAN—Fire department vehicles, chassis of own manufacture. Azar Neshan Co. Ltd. (dist., agent, retailer), 9-11 Honarestan St., Sevom Esfand Ave., Tehran. WTD 1/71.

37141 — THAILAND — Filters, air, oil-fuel, for automobiles. Requests catalogs, c.i.f. Bangkok prices. Pressure Container Industry Corp., Ltd. (importer, dist., mfr.), 79 Chueplerng Rd., Chongnonsee, P.O. Box 628, Bangkok. WTD 4/71.

Aircraft, parts

37291—PAKISTAN—Aircraft parts, accessories. Requests catalogs, quotations, c. & f. Karachi. Marghzar Industries Ltd. (agent), P.O. Box 2706, Karachi. WTD in prep.

Engineering, laboratory, scientific, research instruments

38111 — PAKISTAN — Aircraft instruments. Requests catalogs, quotations, c. & f., Karachi. Marghzar Industries Ltd. (agent), P.O. Box 2706, Karachi. WTD in prep.

38112 — CANADA — Liquid transfer pumps, centrifuges, stirrers, shakers, test presses. Edwards High Vacuum (Canada) Ltd., Attn: B. M. Stockdale, Marketing (mfr.'s agent), 430 South Service Rd. West, Oakville, Ontario. WTD in prep.

38112 — SWITZERLAND — Laboratory measuring, testing equipment. AMF Venner AG, Attn: Mr. Bettosini (dist., agent), Gerhardstr. 1, 8036 Zurich. WTD 5/71.

Optical instruments, lenses

38310 — SWITZERLAND — Laboratory analysis instruments. AMF Venner AG, Attn: Mr. Bettosini (dist., agent), Gerhardstr. 1, 8036 Zurich. WTD 5/71.

Surgical, medical, dental instruments

38423—PORTUGAL—Safety helmets for motorcycle racers. ACEL-Auto Acessorios, Lda. (importer, agent), Rua Rebelo da Silva 4-A, Lisbon 1. WTD in prep.

Musical instruments, parts

39314—SWITZERLAND—Children's toy type musical instruments for sale in supermarkets, departments stores. Walter Anderegg Handelsagentur (importer, dist., agent), Dachslernstrasse 197, 8048 Zurich. WTD in prep.

Toys, amusement, sporting goods

39493 — SWITZERLAND — Sporting goods, playground equipment, scuba equipment, other athletic goods for sale in supermarkets, department stores. Walter Andreregg Handelsagentur (importer, dist., agent), Dachslernstrasse 197, 8048 Zurich. WTD in prep.

Manufacturing industries

39999 — SWITZERLAND — Hair work, switches, toupees, wigs, tobacco pipes, cigarette holders, lighters, Christmas tree ornaments, decorations. Walter Anderegg Handelsagentur (importer, dist., agent), Dachslernstrasse 197, 8048 Zurich. WTD in prep.

Motion picture production, distribution

78130—PAKISTAN—Full length feature films, color and black and white, 35-mm, on rental basis. Sh. Ala-ud-Din, Lalla & Co. (importer, dist., agent), Hospital Rd., Lahore. WTD 5/71.

Other Foreign Official Tenders

ARGENTINA—The State Petroleum Entity (YPF) invites bids on basic engineering and construction of a dodecylbenzene plant to be located at the La Plata Refinery, Province of Buenos Aires. Bids due July 15; Tender No. 322/71. Copies of conditions available for 500 Argentine pesos (approx. $122) from Yacimientos Petroliferos Fiscales, Avenida R.S. Pena 777, Buenos Aires. Copy of conditions in Spanish available for review in Rm. 4877, Construction & Engineering Div., Dept. of Commerce, Washington, D.C. 20230.

BOLIVIA—The agency Yacimientos Petroliferos Fiscales Bolivianos (YPFB) announced Tender No. 112/71 for a fully equipped digital seismograph team, including personnel, trucks, tractors, jeep-type vehicles, trailers, and communications equipment. All equipment must be new. Bid deadline June 30. Contract will be for a minimum of one year. Specifications available for $1.68 from YPFB, Div. of Adquisiciones, P.O. Box 401, La Paz, or on loan from the Construction & Engineering Div., Rm. 5877, Dept. of Commerce, Washington, DC. 20230 (202-967-4347). Correspondence preferred in Spanish.

GREECE—A tender for construction and concessional operation of a tourist installation at Skinias, 28 miles from the city of Athens has been announced. Bid deadline Sept. 1. The project will include a 3,500-bed hotel, night club, shops, restaurants, beauty shop, post office, church, bank, and recreational facilities. Specifications, terms, drawings, in French, are available for review in Rm. 5713, Dept. of Commerce, Washington, D.C. 20230 (202-967-3058). Copies in French or Greek may be obtained from Benaki Museum, 1 Koumbari Street, Athens. Requests should be accompanied by certified check for $2.70, price per copy. Bidding proposals should be accompanied by $100,000 bid bond.

INDONESIA—State Plantation VII in Northern Sumatra issued an invitation to bid for two water treatment plants and spare parts. IDA financing. Each plant is to be capable of treating 25 tons of water per hour. Analytical tests of water at the two sites are given in the tender documents. Bids and bid bonds of not less than 1 percent of total bid price are to be delivered to: Perusahaan Negara Perkebunan VII, c/o Djelan Balai Kota No. 8, Medan, Northern Sumatra. Bids due 9 a.m., July 8. Copies of tender documents available for loan by the Construction & Engineering Div., Rm. 5877, BDC, Dept. of Commerce, Washington, D.C. 20230 (202-967-4346).

KENYA—The Tana River Development Co. requests tenders for supply and erection of miscellaneous electrical equipment for underground power house including 7 each MVAC switchboards, neutral earthing equipment, 11 kv. and mv. power cables associated with 2 each 33.8 mva. 11 kv. generators, also station earthing, control building and power station lighting and small power system. Contract No. KAM 610; bid deadline July 15. Individual bidders submit a brief description of comparable work to the Secretary, Tana River Development Co., Ltd., Electricity House, P.O. Box 7936, Nairobi, or Engineering, Power Development Consultants, Marlowe House, 109 Station Rd., Sidcup, Kent, U.K.

LIBYA—The Director General of Civil Aviation issued Tender No. 1346 and 1347 for the supply and installation of nav-aids and communications equipment. Bid deadline July 5. Bid should offer two Category-II ILS systems (Tripoli and Benghazi) including shelters and spares for two years (1346) and HF and VHF radio equipment and two years spares (1347). Copies of tender announcements and specifications are available from the Director General of Civil Aviation, Tripoli for $14 each.

MALAYSIA—The Dir.-Gen., Telecommunications Dept. issued Tender No. (1) DLM PTN(RIP) 002B for the supply of open-wire carrier equipment for a period of five years. Bid deadline is Aug. 9. Copies of tender announcement and specifications available from the Dir.-Gen., Telecommunications Dept., Government of Malaysia, Kuala Lumpur, or on short-term loan to firms in the U.S. from the Communications Div., BDC-720, Rm. 4320, Dept. of Commerce, Washington, D.C. 20230 ★(202-967-4823).

MALAYSIA—The Subscriber Network Branch (Rm. 110) Telecommunications Dept. issued a tender for installation of telephone cables and loading coils for the period of January 1972 to December 1974. Bid deadline July 12. Copies of tender announcement and specifications available from the Subscriber Network Branch (Rm. 110) Telecommunications Dept., Selangor Region Bldg., Jalan Weld Kuala Lumpur upon payment of M$100, or on a short-term loan to U.S. firms from the Communications Div., BDC-720, Rm. 4320, Dept. of Commerce, Washington, D.C. 20230 ★(202-967-4823).

MALAYSIA — The Subscriber Network Branch, Telecommunications Dept. issued a tender for the supply of telephone cables, loading coils and jointing materials for the period January 1972 to December 1974. Bid deadline July 12. Copies of tender announcement and specifications available from the Subscriber Network Branch, Telecommunications Dept., Selangor Region Bldg., Jalan Weld, Kuala Lumpur, upon payment of M$100, or on short-term loan to U.S. firms from the Communications Div., BDC-720, Rm. 4320, Dept. of Commerce, Washington, D.C. 20230 ★(202-967-4823).

TRINIDAD—The Purchasing Officer, Trinidad & Tobago Electricity Commission, 63 Frederick St., Port of Spain, Trinidad, W.I., has invited bids for the following equipment. Tender No. 2215, 3,000 socket tongue couplings; Tender No. 2216, 750 softy helmets; Tender No. 2217, 2,000 rolls PVC self adhesive electrical tape; Tender No. 2218 and 2219, PVC underground cable; Tender No. 2220, 300 parallel grove clamps; Tender No. 2221, 8,000 cross arms braces; Tender No. 2222, outdoor vertical sealing ends. Bid deadline July 2. Specifications available from the Power Equipment Program, Rm. 5886C, BDC, Dept. of Commerce, Washington, D.C. 20230 ★(202-967-4241).

UAR—Supply and erect 11 electrically-driven drainage pumping stations and one transformer substation and auxiliary supplies. Bid deadline 12 noon Oct. 16. Nile Delta Authority for Tile Drainage Projects, 5 A Elgoheiny St., Dokki, Giza. Tenders will be accepted from firms whose country of origin is an IBRD member or from Switzerland. First copy of tender documents available with advance payment of 100 Egyptian pounds; extra copies (up to three) can be obtained for 25 Egyptian pounds. Tender documents may be mailed to tenderers who have no representatives in UAR for an additional charge of ten Egyptian pounds per copy. Applications or requests for tender documents should be submitted on stamped paper of 100 millims available at UAR Consulates.

URUGUAY—The State Power entity extended the bid deadline on Tender No. 6338 for Palmar Hydroelectric Project from May 11 to August 11. (See *Commerce Today*, Feb. 22, 1971, p. 55, and *Commerce Business Daily*, Feb. 11, 1971, p. 22.)

Future Construction Abroad

CANADA—Work should begin soon on development of the **James Bay Hydroelectric Project**. The program, which will harness the power of five to ten rivers, will take ten years to complete and is expected to cost around $6 billion. The project will produce 10 million kilowatts.

CANADA—British Columbia hopes that private industry will construct a **natural gas pipeline** from William Lake on the mainland of B.C. to Vancouver Island. The deadline for submission to the Provincial Government, Victoria, is July 30, with construction, hopefully, to commence this winter.

CANADA—McIntyre Porcupine Mines Ltd., Toronto, recently disclosed that a multi-million dollar (perhaps as much as $100 million), **loading facility** may be built near Prince Rupert. The loading facility should be able to handle 10 million tons a year. Possible sites for the facility are Ridley Island and Kitson Island. The project will require detailed planning before any final contract is signed.

DOMINICAN REPUBLIC—The Government intends to undertake a $30 million **road reconstruction program**. Sales opportunities for U.S. suppliers of various types of road construction equipment are available. The nation-wide rebuilding program will involve 810 miles of highway and secondary roads. Impending purchases will include grading and drainage construction equipment, spreaders, cement molds, dump trucks and, subsequently, traffic direction control and safety equipment such as highway markers, signals and signs.

FRANCE—**Expansion of an electronic equipment plant** at Meylar, a Grenoble suburb, is planned. Merlin Gerin, one of France's leading manufacturers of high and low voltage equipment, includes an electronic branch which produces industrial electronic equipment.

HONDURAS—The Government has invited Honduran architects to present their qualifications to **develop a hospital construction project**, a 365-bed hospital-school for Tegucigalpa which is expected to cost $7.1 million. U.S. hospital equipment suppliers should contact the Honduran Ministry of Public Health and Social Assistance, 3a. Calle, 4a. Avenida, Tegucigalpa.

HONG KONG—The Government is considering a Mass Transit Further Studies report which recommended a **massive transport system that would cost $724.6 million**. The actual cost is expected to exceed the estimated cost by as much as $375 million. The scheme, when approved, would represent substantial opportunities for construction and contractor's services, $491.6 million; for suppliers of electrical and mechanical equipment, $207.6 million; and for financial institutions.

INDIA—FACT Engineering and Design Organization (FEDO), a division of Fertilizers and Chemicals Travancore Ltd. (FACT), Udyogamandal, Alwaye, Kerala, proposes to issue global tenders for **capital equipment and raw materials for Phase II of the $60 million Cochin Fertilizer Project**. Imports will be for four proposed plants: sulphuric acid plant, phosphoric acid plant, NPK granulation plant, and a cryolite plant. Inquiries regarding the supply of machinery should be sent to to K. Gulati, Purchasing Mgr., FACT Engineering & Design Organization, Udyogamandel, Alwaye, Kerala State, India.

JAMAICA—Island Cassava Industries Ja. Ltd. is studying the construction of a new **factory to produce cassava starch**. A minimum capacity of seven tons a week is anticipated for this turnkey project. Managing Director, Dr. A. E. Feanny, Island Cassava Industries Ja. Ltd., 226 Old Hope Rd., Kingston 5.

JAMAICA—Donald U. Lowe, Managing Director of Citrad Ltd., 31 Brentford Rd., Kingston 5, is studying the **establishment of a new firm to coat galvanized and black iron steel pipes inside and outside with epoxy resin**. This turnkey project would be relatively small to suit the Jamaican market.

JAMAICA—Ishmael E. Robertson, Acting General Manager of the Agricultural Marketing Corp. (AMC), 188 Spanish Town Rd., Kingston 11, is exploring the possibility of **setting up a local fumigation plant** for the fumigation of yams and mangoes; this project is on turnkey basis.

JAMAICA—Pan-Jamaican Investment Trust Ltd. (Pan-Jam), 72-76 Harbour St., Kingston, is a holding company involved in property development and the hardware and lumber business. They plan the **construction of two office buildings** costing over $7 million. Pan-Jam intends to develop another **8-story condominium** apartment complex at a future date. Plans are also being prepared for a 50% **expansion of a shopping center**. Other Pan-Jam **expansion projects** of interest to American suppliers are: six acres of land in Newport East for the expansion of a pressure-treating lumber plant; the land acquisition makes available 1,000 ft. of sea frontage for wharf expansion. Write: Maurice W. Facey, Chairman and Chief Executive.

JAMAICA—The Embassy Apartments, located on a 4-acre site on Upper Waterloo Rd. in suburban St. Andrew, will contain 68 two and three bedroom apartments. The **apartment project** will begin soon and is to be completed by August 1972. United Construction Ltd., 149 King St., Kingston, is interested in suppliers of bathroom fixtures, kitchen sinks, sink disposals, styrene ceiling tile, seamless flooring, waste compactors for apartment complex, bath and shower fittings and accessories, 2-ton construction lifts and general construction equipment.

JAMAICA—Belair Hotel Ltd., a subsidiary of LAI Corporation Ltd., is constructing a **42-room hotel** in Mandeville. Most supply contracts have not yet been concluded. Contact: Developer: Lai Corp. Ltd., 35 Trafalgar Rd., Kingston 10. Contractor: Townend & Godfrey Bros. Ltd., Mandeville. Structural Engineer: Hue Lyew & Chin, Haining Rd., Kingston 10.

JAMAICA—Andrew Duncan, Chairman, Jamaica Pre-Mix Ltd., 31 Molynes Rd., Kingston 10, is studying a possible joint venture with a U.S. company to **manufacture pre-stressed concrete products**.

KOREA—Korea's Office of Fisheries is planning to request $5 million in IBRD loans for the **construction of inshore vessels** that would include whaleboats, shrimp trawlers and some training boats. These will be constructed by local shipyards to replace old fishing fleets owned by private fishing firms. The loan will also be used for the purchase of modern fishing equipment.

KOREA—The Government will apply for a 5 million ADB loan to finance **11 vocational training institutes**. These institutes will be located in Seoul and Pusan, and in each of the nine provinces. The project calls for the training of a total of 5,370 technicians and skilled workers per year. The loan will be used to purchase laboratory equipment for several courses. The Korean Government will issue public tenders for the necessary equipment.

MEXICO—A program to **rehabilitate Mexican ports** has been authorized. Primary attention will be given to rehabilitate the existing facilities and construct grain elevators and a complete container cargo handling facility in the Port of Veracruz. Heavy machinery for loading and unloading ship cargos as well as land handling equipment will be purchased. Write: Ing. Jaime LUNA Traill, Vocal Coordinador de la Comision Nacional Coordinadora de Puertos, Ave. Juarez 92, 7° piso, Mexico, D.F.

PHILIPPINES—Republic Flour Mills, Inc., is planning to invest $86 million in its **agri-business projects** during the 5-year period ending 1975. These projects are a vertically integrated poultry farm, a modern piggery, a baby foods manufacturing plant and a meat canning factory. Interested American firms should contact the company's president, Jose S. Concepcion, Jr., Republic Flour Mills Compound, Pioneer St., Pasig, Rizal, Philippines, P.O. Box 1881, Manila.

THAILAND—Officials of the Royal Thai Government and the Malaysian Government are negotiating an agreement to form a 50/50 joint venture to operate a **bus line between Bangkok and Kuala Lumpur.** Total initial investment will be B7 million, one-half of which will be contributed by each government. Inquiries may be sent to: Col. Boonpaen Kamomthong, Gen. Man., The Transport Co., Ltd., 1034/39 Paholyothin Rd., Bangkok. This project offers opportunities to sell air-conditioned buses, automotive servicing equipment, and to invest in the operation of terminal motel facilities along the 1,500 kilometer route between Bangkok and Kuala Lumpur.

TRUCIAL STATES—The Shaikhdom of Abu Dhabi is contemplating the **construction of a 240 million ton capacity cement plant.** A feasibility study on the project is now being undertaken. American firms interested in further details should write: Joe Yache, P.O. Box 277, Abu Dhabi, Trucial States.

New Trade Lists

The Bureau of International Commerce has published the following Trade Lists. Copies may be obtained by firms domiciled in the United States from BIC-924-TL, Department of Commerce, Washington, D.C. 20230, and from Commerce Field Offices. The price is $1 per list for each country.

Turkey

No.	*Title*
01000	Farm, forestry, fishery products; mining companies
20000	Food, kindred products; tobacco, tobacco products
22000	Textile industry
24000	Lumber, wood products; furniture, fixtures
26000	Pulp, paper, paperboard mill products; converted paper, paperboard products; building paper, boards; printing, publishing industries
28000	Chemicals, plastics, related products
32000	Stone, clay, glass products
30000	Rubber products (except tires, inner tubes)
33000	Primary metals, metal products, ferrous, non-ferrous
34000	Fabricated metal products
35000	Machinery, nonelectrical
36000	Electrical machinery, equipment, supplies
37000	Transportation equipment, parts, accessories (including tires, inner tubes)
38000	Professional, scientific instruments, controlling devices; photographic equipment, supplies; watches, clocks; jewelry, silverware, plated ware
39000	Musical instruments; sporting, athletic goods; office, artist's materials; costume jewelry; novelties, notions; miscellaneous manufactured products

Quarterly Summary Listing Future Construction Projects Overseas Now Available

A quarterly summary of future construction projects abroad, contract award stories and significant foreign government tenders published in *Commerce Today* and "Commerce Business Daily" during January, February and March 1971, is available to U.S. firms from Business Opportunities Staff, BOS-580, Department of Commerce, Washington, D.C. 20230. A pre-addressed mailing label should be included with the request.

The summary, which may also be reviewed at any of the 42 Commerce Field Offices, alphabetically lists project summaries by country in five distinct classes: airport, seaport, railroad and highway projects; hydro and thermal electric plant and irrigation projects; hospital, hotel and housing projects; industrial plant projects; and comprehensive development projects. Whenever possible, names of contractors and responsible agencies are cited, as well as original publication dates.

A limited number of copies of the fourth quarter 1970 summary is also available on a first-come basis.

Visiting Buyers And Officials

AUSTRALIA—Peter J. Ambry, C.C.M. Supplies Co., 31 Northcote Ave., Balwyn, Melbourne, **interested in agencies or licenses for local manufacture of textiles, chemicals and in importing U.S. woven fiberglass.** June 14 via New York for 7-10 days. c/o Australian Consulate General, 636 Fifth Ave., New York, N.Y. Itinerary: New York, Atlanta, Greenville, S.C., Elkton, Md. WTD in prep.

AUSTRALIA—Mr. & Mrs. W. K. King, W. K. King Pty. Ltd., Kempthorne House, 247 Pacific Highway, North Sydney, N.S.W. 2060, **interested in food and food raw materials including dehydrated vegetables, grocery lines, lines saleable through grocery outlets.** June 16 via Seattle for 3 weeks. c/o Californian Almond Growers Exchange, P.O. Box 1768, Sacramento, Calif. 95808. Itinerary: June 17, Seattle, c/o Travelodge Seattle Center; June 18-19, Omaha, c/o Travelodge, Omaha; June 21, Chicago, c/o Shore Drive Motel; June 26-29, New York, c/o Hotel Picadilly; June 30, Philadelphia, c/o Adelphia Hotel; July 1-2, Los Angeles, c/o Mayflower Hotel; July 3-8, San Francisco, c/o Californian Hotel; July 9-10, Honolulu, c/o Reef Hotel. WTD 6/70.

BRAZIL—Dr. Julio Cesar Garcia de Souza, Companhia de Petroleo da Amazonia—COPMA Rua Guilherme Moreira 233, Manaus, Amazonas, **interested in petroleum refining and requesting technical information on petrochemicals.** June 29 via Miami for 1 mo. c/o Gulf Oil Co.-Latin America, P.O. Box 910, Coral Gables, Fla. 33134. Itinerary: Miami, Coral Gables. WTD 3/71.

ENGLAND—T. A. Sheriden and F. Raine, Constantine Group, 1/7 Rangoon St., London E.C. 3, **interested in import, export, household removals, containerization, antiques packing and shipping, air freight, international forwarding.** June 20 via New York for 3½ weeks. Itinerary: June 20-23 and July 11-13, New York, c/o St. Regis Hotel; June 30-July 1, Chicago, c/o Sheraton Hotel; July 1-3, San Francisco, c/o Hilton, July 3-7, Los Angeles, c/o Beverly Hilton; July 7-8, Houston, c/o Shamrock Hilton; July 8-10, New Orleans, c/o Sheraton Charles Hotel; July 10-11, Miami, c/o 4 Ambassadors. WTD in prep.

ENGLAND—Gordon R. Davies, Hill Davies (U.K.) Ltd., 22 Oakwood Ave., Otterbourne, Hampshire, **interested in importing U.S. craft goods, negotiating licensing agreement for production line materials handling machinery, exporting English craft goods.** June 9 via San Francisco for 1 mo. c/o Vistapac, 24 California St., San Francisco, Calif. 94111. Itinerary: June 9-18, San Francisco; June 18-28, New York. WTD in prep.

JAPAN—15-man NOMA Electronic Data Processing Systems Study Team led by Keisuke Mizushima, representing Nippon Office Management Association (NOMA), 1-13 Sendagaya 4-chome, Shibuya-ku, Tokyo, **interested in electronic computers and peripherals, newly developed hardware and software.** June 16 via Los Angeles for 30 days. Itinerary: June 16-20, Los Angeles, c/o Angeles Hilton Hotel; June 20-21, Dallas, c/o Statler Hilton Hotel; June 21-26, Houston, c/o Sheraton Lincoln Hotel; June 26-29, Washington, D.C., c/o Washington Hilton Hotel; June 29-July 4, New York, c/o New York Hilton Hotel; July 4-6, Rochester, c/o Rochester Flagship Hotel; July 6-10, Chicago, c/o Conrad Hilton Hotel; July 10-13, San Francisco, c/o San Francisco Hilton Hotel; July 13-14, Honolulu, c/o Hilton Hawaiian Village Hotel.

NEW ZEALAND—Winstone Harris, Managing Director, A. R. Harris Co. Ltd., P.O. Box 1007, Christchurch, **interested in electrical recording and control instruments for import and manufacture under license in New Zealand.** June 9 via New York for approx. 2 weeks. c/o Mining Equipment Div., WABCO, 4834 S. Halsted St., Chicago, Ill. 60609; Edison Battery Div. McGraw Edison Co., P.O. Box 28, Bloomfield, N.J. Itinerary: New York, Chicago, Los Angeles. WTD 3/69 under revision.

SOUTH AFRICA—Fritz Knoessen, Impala Inn (Pty) Ltd., Phalaborwa, Transvaal, **interested in meeting U.S. hotel chain officials.** June 3 via Los Angeles for 2 mos. c/o Dept. of Commerce Los Angeles Business Service Center. Itinerary: Los Angeles, other cities as necessary. WTD in prep.

International Business Reports

Marketing Research in the Developing Countries. By John Z. Kracmar. 322 pp. $17.50.

A handbook of techniques for increasing investment and improving standards of living. Provides descriptions of procedures the researcher may encounter in a developing economy. Discusses interviewing; sampling; quantitative, product, price, advertising, retailing, and financial marketing research; and the establishment of a marketing research function in a firm. Includes a comprehensive dictionary of research terms; a multilingual dictionary of commonly used terms; indicators of market size in 140 countries; and addresses of marketing research firms in 40 developing countries.

Write: Praeger Publishers, 111 Fourth Ave., New York, N.Y. 10003.

Handbook of International Purchasing. By Paul H. Combs. 168 pp. $9.50.

Should you and your company look to foreign sources for finished goods or component parts? This book is designed to show you how to weigh the factors for and against buying abroad and how to determine whether foreign purchasing is the answer to your needs. A survey of the problems involved and their solutions shows how to get a foreign buying program started and how to keep it going.

Write: Cahners Book Division, 221 Columbus Ave., Boston, Mass. 02116.

Comparative Management: Organizational and Cultural Perspectives. By Stanley M. Davis. 593 pp. $11.95.

This collection of articles and case histories examines the impact of cultural differences on business organizations and management in all parts of the world. Each of the five main sections is devoted to a specific global area and consists of an introductory chapter; six readings on specific issues or cultural sectors; and three case histories designed to provide the opportunity to solve actual problems. Each also contains a selected bibliography.

Write: Prentice-Hall, Inc., Englewood Cliffs, New Jersey 07632.

Salesmen's Compensation: Plans, Policies and Trends. $19.95.

Designed for those actively engaged in planning, organizing, staffing and controlling a salesforce, the book's contents draw from research conducted among 375 companies representing all major SIC divisions. Sixty-two tables are included, covering such subjects as: earning levels by SIC category; expense reimbursement plans; compensation plans by class of buyer; number of hours worked by salesmen; trends in pension plan usage; trends in unionization; company-owned vs. salesmen-owned cars; and use of "house accounts."

Write: Sales Success Unlimited, 717 N. Glenhurst Dr., Birmingham, Michigan 48009.

Foreign Trade in the Economic Development of Small Nations: The Case of Ecuador. By Charles R. Gibson. 327 pp. $17.50.

This book reviews the controversy over the role of trade in small nations' development, and provides an overview of Ecuador's economy and an analysis of the external sector. Subjects discussed include the country's commercial and exchange policy, its trade flows and their consequences, its present position and future export prospects, its place in international trade, and the impact of foreign aid and private investment.

Write: Praeger Publishers, 111 Fourth Ave., New York, N.Y. 10003.

Economic Productivity in Israel. By Arieh Gaathon. 280 pp. $10.

Analysis of factors producing Israel's exceptional economic growth between 1950 and 1965. The author focuses on the interrelationship of capital stock, employment, prices, income, real productivity, and other input and output factors.

Write: Praeger Publishers, 111 Fourth Ave., New York, N.Y. 10003.

Calendar For World Traders

June 17—Kalamazoo—Seminar on how Eximbank and FCIA help smaller exporters, Holiday Inn Expressway, 1:30-8 p.m. Sponsors: Detroit Field Office, Michigan Dept. of Commerce.

June 17 — New York — Luncheon meeting of the Foreign Credit Interchange Bureau's Drug, Chemical and Food Export Club, Advertising Club, 12:15 p.m.

June 18—Bay City, Mich.—Seminar on how Eximbank and FCIA help smaller exporters, Holiday Inn, 1:30-8 p.m. Sponsors: Detroit Field Office, Michigan Dept. of Commerce.

June 22—Springfield, Mo.—Export development seminar, 9:30-noon, and export documentation workshop, 2-4 p.m., Chamber of Commerce headquarters. Sponsors: REEC, Chamber of Commerce, Kansas City Field Office.

June 24—Joplin, Mo.—Export development seminar 9:30 a.m.-noon, and export documentation workshop, 2-4 p.m., Chamber of Commerce headquarters. Sponsors: Chamber of Commerce and Kansas City Field Office.

June 24—Phoenix—Export workshop, 10 a.m.-noon, Commerce Dept. Field Office.

New Publications

OFFICE OF THE SECRETARY

National Industrial Pollution Control Council

Pollution problems in selected food industries—excludes meat, poultry and grain-based foods. 34pp. 30¢.

DOMESTIC AND INTERNATIONAL BUSINESS

Bureau of Domestic Commerce

Copper. Quarterly industry report. April 1971. Annual subscription $1 (25% more for foreign mailing). Single copy 25¢.

Containers and packaging. Quarterly industry report. April 1971. Vol. 24, No. 1. Annual subscription $1 (25¢ more for foreign mailing). Single copy 25¢.

Bureau of International Commerce

Foreign Economic Trends. Annual subscription $15 ($6 more for foreign mailing). Single copy 10¢. Latest reports include:

Senegal (ET 71-029). 8pp.
Spain (ET 71-038). 12pp.
Sudan (ET 71-039). 12pp.
Indonesia (ET 71-040). 12pp.
Malaysia (ET 71-043). 12pp.
Greece (ET 71-041). 12pp.
Mozambique (ET 71-042). 8pp.
Chile (ET 71-044). 12pp.
Congo (Kinshasa) (ET 71-045). 16pp.
Kuwait (ET 71-046). 16pp.
Mexico (ET 71-048). 12pp.

International Marketing Information Service

Exhibitor's Export Market Guides

Italy offers promising sales prospects for latest U.S. fluid power equipment (IMIS 71-017). 4pp. 10¢.

Steady French electronics growth creates demand for production, test equipment (IMIS 71-019). 4pp. 10¢.

World Markets for U.S. Exports

Food processing and packaging machinery and equipment—United Kingdom (IMIS 71-203). 12pp. 10¢.

Industrial, scientific instruments—Japan (IMIS 71-204). 16pp. 10¢.

ECONOMIC AFFAIRS

Office of Business Economics

Survey of Current Business. Vol. 51, No. 5. Annual subscription including weekly statistical supplements, $9 ($3.75 more for foreign mailing). Single copy $1.

Bureau of the Census

Congressional District Data. The following reports present 1970 population and housing data and recent election statistics for districts of the 92d Congress.

Alabama (CDD-92-1). 8pp. 25¢.
Kentucky (CDD-92-15). 8pp. 25¢.
Oklahoma (CDD-92-33). 8pp. 25¢.
Tennessee (CDD-92-39). 8pp. 25¢.

Construction and Housing

Value of new construction put in place: March 1971 (C30-71-3). Annual subscription $2.50, includes monthly and annual supplement. Single copy 25¢.

Sales of new one-family homes: March 1971 (C25-71-3). Annual subscription (including monthly, quarterly, and annual reports) $3. Single copy prices: monthly, 10¢; quarterly, 25¢ and annual, $1.

Authorized construction Washington, D.C. area: April 1971 (C41-71-4). Annual subscription $1. Single copy 10¢.

Vacant housing units in the United States: first quarter 1971 (Series H-111, No. 64). Annual (Series H-111 and H-121, combined), $1.50 (50¢ more for foreign mailing). Single copy 20¢.

Distribution and Services

Estimated weekly sales of U.S. retail stores for the week ending May 15 (CB 71-328). 2pp. 10¢.

Estimated weekly sales of U.S. retail stores for the week ending May 22 (CB 71-329). 2pp. 10¢.

Canned food—stocks, pack, shipments: April 1, 1971 (B1-71-3). Annual subscription, including five issues, $1. Single copy 25¢.

Monthly department store sales in selected areas: March 1971 (BD 71-3). Annual subscription $1. Single copy 10¢.

Foreign Trade

U.S. foreign trade statistics 1970—classifications and cross-classifications. 580pp. $6. This new edition brings together all the schedules of commodity and geographic trade classifications and cross-classifications used during 1970 in the compilation and publication of U.S. foreign trade statistics.

Bunker fuels: March 1971 (FT 810-71-3). Annual subscription $1. Single copy 10¢. Oil and coal laden in the United States on vessels engaged in foreign trade.

Exports-commodity by country: February (FT 410-71-2). Annual subscription $33 ($8.25 more for foreign mailing). Single copy $2.75.

Imports-commodity by country: February (FT 135-71-2). Annual subscription $21 ($5.25 more for foreign mailing). Single copy $1.75.

Export and import merchandise: April (FT 900-71-4). Annual subscription (FT 900, 975, 985, and 986 combined) $3. Single copy 10¢. Seasonally adjusted and unadjusted data.

Governments

Local Government employment in selected metropolitan areas and large counties: 1970 (GE 70 No. 3). 107pp. $1. The first of a new annual publication in the Government employment series planned to provide local government employment and payroll data in major SMSA's and large county areas. This initial publication supplies data based on a survey for October 1970.

Population

Recent purchases of cars, houses, and other durables, and expectations to buy during the months ahead: survey data through April 1971. (Series P-65, No. 36). 22pp. 20¢.

Median family income up in 1970 (advance data from March 1971 sample survey) (Series P-60, No. 78). 8pp. 10¢.

Current Population Reports, issued in Series P-20, P-23, P-25, P-26, P-27, P-28 (summaries only). P-60, and P-65 are sold as a consolidated subscription at $14 per year, $3.50 more for foreign mailing.

1970 Census of Population
Number of Inhabitants

Arizona (PC(1)-A4). 32pp. 40¢.
Connecticut (PC(1)-A8). 36pp. 40¢.
Hawaii (PC(1)-A13). 29pp. 40¢.
Idaho (PHC(2)-14). 15¢.
Maine (PC(1)-A21). 44pp. 40¢.
North Dakota (PC(1)-A36). 37pp. 45¢.
New Mexico (PC(1)-A33). 33pp. 40¢.
Rhode Island (PC(1)-A41). 28pp. 40¢.

General Demographic Trends for Metropolitan Areas, 1960 to 1970—Final Reports:

Idaho (PHC(2)-14). 20pp. 15¢.
Nevada (PHC(2)-30). 24pp. 20¢.

Data-collection forms and procedures (PHC(R)-2). 122pp. $1.25. The principal enumeration forms used in the 1970 Census of Population and Housing are presented, together with a brief description of the census field procedures. Only data-collection forms and procedures used in the main census enumeration are included.

SCIENCE AND TECHNOLOGY

National Oceanic and Atmospheric Administration

Ionospheric predictions for July 1971. Number 100. 36pp. 25¢. Predictions are issued monthly as an aid in determining the best sky-wave frequencies over any transmission path, at any time of day, for average conditions for the month.

Monthly weather review. May 1971. Vol. 99, No. 5. Annual subscription $7.50 ($2 more for foreign mailing). Single copy 65¢.

Space—environmental vantage point. 1971. 36pp. 70¢. Illustrated.

Environmental Data Service

Climatological data—national summary: October 1970. Vol. 21, No. 10. Annual subscription, including monthly and annual issues $2.50 ($1 more for foreign mailing). Single copy 20¢, annual issue 40¢. Gives a general summary of weather conditions, condensed climatological summary for the states, climatological data by stations for the states, Pacific Area, and West Indies, degree data along with various climatological charts, river stages and flood data, and upper air data.

Daily weather maps, weekly series. (Including Sundays and holidays.) Annual subscription $7.50 ($7.50 more for foreign mailing). Single copy 15¢. Features for each day of the weekly period, Monday through Sunday, a surface weather map of the United States showing weather conditions observed daily at 7 a.m. EST throughout the country.

Mariners weather log. Vol. 15, No. 3. Inquiries concerning distribution should be addressed to: Environmental Data Service, Gramax Building (D433) 8060 13th St., Silver Spring, Md. 20910.

Environmental Research Laboratories

Faraday rotation experiments in the D region (NOAA TR ERL 205-SEL 21). 35pp. 40¢. The use of the Faraday rotation technique for determining electron densities in the D region is examined theoretically and experimentally.

National Ocean Survey

United States coast pilot 3. Atlantic Coast—Sandy Hook to Cape Henry. Ninth edition—1971. For sale by the National Ocean Survey and its sales agents. 256pp. $2.

Tide tables—high and low water predictions 1972. West Coast of North and South America including the Hawaiian Islands. Issued 1971. 230pp. For sale by the National Ocean Survey and its sales agents. $2.

Preliminary determination of epicenters: Monthly listings, February. 16pp. Annual subscription $1.50 (50¢ more for foreign mailing). Single copy 15¢. These reports list the approximate locations of earthquakes anywhere in the world, with origin time, latitude, longitude, region of occurrence, depth, magnitude and when available, comments on damage and casualties and miscellaneous information.

National Bureau of Standards

Physics and chemistry—Section A of the Journal of Research of the National Bureau of Standards. Bimonthly. Volume 75A, No. 2. March-April 1971. Subscription price: $9.50 a year; $2.25 more for foreign mailing. Single copy price varies.

Technical news bulletin. May 1971. Vol. 55, No. 5. Annual subscription $3 ($1 more for foreign mailing). Single copy 30¢.

Application of capacitor microphones and magnetic pickups to the tuning and trouble shooting of microelectronic ultrasonic bonding equipment (Tech. Note 573). 24pp. 35¢. Microelectronic ultrasonic wire bonding equipment typically welds wires to integrated circuits at frequencies between 50 and 65 kHz. Mechanical vibrations at these frequencies are difficult to measure directly and malfunctions of the system may not be recognized. Two different methods of measuring these vibrations are described.

Method of calibrating weights for piston gages (Tech. Note 577). 54pp. 55¢. This paper presents direct comparison methods for calibrating piston gage weights for use with both equal-arm balances and single-pan balances. Methods of estimating the uncertainty of the values obtained are given. Also included are methods of checking for blunders or gross errors.

The physical basis of atomic frequency standards (Tech. Note 399). 54pp. 60¢. A tutorial discussion of the physical basis of atomic frequency standards is given. These principles are then related to the conditions under which an atom can be used as the working substance of a stable and accurate frequency standard.

Computer code for the calculation of thermal neutron absorption in spherical and cylindrical neutron sources (Tech. Note 576). 25pp. 35¢. A computer code has been written in FORTRAN IV for the calculation of thermal neutron absorption in spherical and cylindrical neutron sources. The formalism of the calculation, the structure of the computer code, a listing of the code, and some sample results are presented.

Specifications and tolerances for reference standards and field standard weights and measures—3. Specifications and tolerances for metal volumetric field standards (Handb. 105-3). 8pp. 25¢. These specifications and tolerances are recommended as minimum requirements for standards used in the field by state and local weights and measures officials in quantity determinations of liquid commodities.

A high-dispersion spectral analysis of the Ba II star HD 204075 (capricorni) (Monogr. 119). 174 pp. $3.25. Because of the great interest in the barium stars, it was considered of some importance to make an accurate study of one of them at higher dispersions than heretofore available. This would eliminate some of the problems caused by the severe blending that results from their spectroscopic richness in lines of the singly ionized rare earths. The present investigation is attempting to derive the physical parameters and chemical composition of the atmosphere of Capricorni from this observational material.

National Technical Information Service

Order the following reports on Government-sponsored research from: National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22151. Make check or money order payable to National Technical Information Service. Price for each document is $3 (microfiche 95¢), unless otherwise specified.

A bibliography of Arctic water resources (PB-198 668). University of Alaska, College, for OWRR. Paper copy $6. 543pp. Contains 2,978 references pertaining to the nature of the land-based water cycle in Alaska's arctic and subarctic regions.

Selected technical spinoffs from the space program (AD-722 090). Air War College, Maxwell AFB. 23pp. Describes NASA's Technology Utilization Program and some of the many spinoffs from the space program. Spinoffs include examples from management technology, communications, aeronautics, medicine, fabrics, highway safety, and weather forecasting.

Management engineering (AD-722 870). Defense Documentation Center, Alexandria, Va. 201pp. DDC bibliography (with abstracts) containing 161 references pertinent to management planning in transportation, industries, civil defense systems, and other man-organized systems. All reports listed are available from National Technical Information Service.

Rationale for making decisions. (AD-722 930). Defense Documentation Center, Alexandria, Va. 225pp. DDC bibliography (with abstracts) containing references to reports on major 1970 decisions involved in policy procedures and to reports on critical analyses of past experiences as they apply to present situations. All reports listed are available from the National Technical Information Service.

Technological and economic feasibility of advanced power cycles and methods of producing nonpolluting fuels for utility power stations (PB-198 392). United Aircraft Research Labs., East Hartford, Conn., for the National Air Pollution Control Admin. Paper copy $6, 569pp. Evaluates coal and oil conversion processes for technology currently available and technology judged to be attainable within 10 and 20 years. Report presents flow sheets for processes judged to have the potential of meeting sulfur oxide emission goals projected for the next two decades, gives economic characteristics of selected processes, and compares estimated costs of desulfurized fuels.

Technical-economic evaluation of air-pollution corrosion costs of metals in the U.S. (PB-198 453). Battelle Memorial Institute, Columbus, Ohio, for the Environmental Protection Agency. 160pp. Assesses the present economic loss to the Nation resulting from corrosion damage of externally-exposed structures or systems to man-made pollutants in the atmosphere and establishes the probable size of the economic loss in 1980.

A conceptual framework for measurement of the impact of foreign trade on workers (PB-198 579). U.S. Dept. of Agriculture Graduate School, for the Manpower Admin. 115pp.

Trends in the usage of fluorspar (PB-198 339). National Academy of Sciences—National Academy of Engineering, for the General Services Admin. 60pp.

National evaluation of Operation Mainstream, Phase I: The Green Thumb-Green Light Program (PB-197 609). By Kirschner Assoc. of Albuquerque for the Manpower Admin. 247pp. Describes and analyzes goals, activities, structure, operation and effects of Green Thumb-Green Light, a program to employ poor workers who are 55 and older.

Government-supported research—international affairs. (AD-718 800). By the Dept. of State. 227pp. Describes research projects for fiscal year 1970 in the social and behavioral sciences dealing with international affairs.

National rail passenger service survey (PB-197 916). By Market Facts, Inc. of Washington, D.C. for the Federal Railroad Admin. 88pp.

Emission optimization of heat engine/electric vehicle (PB-198 093). By Minicars Inc. of Goleta, Cal., for the Environmental Protection Agency. 98pp. Determines relative reduction in exhaust emissions obtainable from a heat engine/electric hybrid vehicle compared to the same vehicle powered by a heat engine only.

Office of Telecommunications

Ionospheric predictions for August 1971. Number 101. Single copy 25¢. 36pp. These ionospheric predictions are issued monthly as an aid in determining the best skywave frequencies over any transmission path, at any time of day, for average conditions for the month.

Loran A groundwave pulse propagation (OT/ITS RR 10). 78pp. 70¢. The Loran A groundwave radio navigation pulse is analyzed with a computer simulation of the general pulse propagation theory for linear amplitude systems.

☆ U.S. GOVERNMENT PRINTING OFFICE: 1971—J. 432-034/26

Commerce Department Directory

Commerce Building, 14th Street and Constitution Avenue, Washington, D.C., 20230
Phone (202) 783-9200

MAURICE H. STANS, Secretary of Commerce

JAMES T. LYNN, Under Secretary of Commerce

SECRETARIAL OFFICERS

ROBERT McLELLAN, Asst. Secretary for Domestic and International Business

ROBERT A. PODESTA, Asst. Secretary for Economic Development (Economic Development Administration)

LARRY A. JOBE, Asst. Secretary for Administration

HAROLD C. PASSER, Asst. Secretary for Economic Affairs

J. H. WAKELIN, JR., Asst. Secretary for Science and Technology

ANDREW E. GIBSON, Asst. Secretary for Maritime Affairs (Maritime Administration)

C. LANGHORNE WASHBURN, Asst. Secretary for Tourism (U.S. Travel Service)

WILLIAM N. LETSON, General Counsel

HEADS OF OPERATING UNITS

ROBERT M. WHITE, National Oceanic and Atmospheric Administration

DONALD P. KATZ, Office of Foreign Direct Investments

WILLIAM E. SCHUYLER, JR., Patent Office

LEWIS M. BRANSCOMB, National Bureau of Standards

GEORGE H. BROWN, Bureau of the Census

HAROLD B. SCOTT, Bureau of International Commerce

HUDSON B. DRAKE, Bureau of Domestic Commerce

GEORGE JASZI, Office of Business Economics

ARMIG G. KANDOIAN, Office of Telecommunications

WILLIAM T. KNOX, National Technical Information Service

OMBUDSMAN FOR BUSINESS

Thomas E. Drumm, Jr.

BUSINESS SERVICES FIELD OFFICES

ALBUQUERQUE, N.MEX., 87101, U.S. Courthouse. Area Code 505,843-2386.

ANCHORAGE, ALASKA, 99501, 412 Hill Bldg., 632 Sixth Ave. Area Code 907, 272-6531.

ATLANTA, GA., 30303, 4th Floor Home Savings Bldg., 75 Forsyth St., NW. Area Code 404, 526-6000.

BALTIMORE, MD., 21202, 305 U.S. Customhouse, Gay and Lombard Sts. Area Code 301, 962-3560.

BIRMINGHAM, ALA., 35205, Suite 200-201, 908 S. 20th St. Area Code 205, 325-3327.

BOSTON, MASS., 02203, Room 510, John Fitzgerald Kennedy Federal Bldg. Area Code 617, 223-2312.

BUFFALO, N.Y., 14203, 504 Federal Bldg., 117 Ellicott St. Area Code 716, 842-3208.

CHARLESTON, S.C., 29403, Federal Bldg., Suite 631, 334 Meeting St. Area Code 803, 577-4171.

CHARLESTON, W.VA., 25301, 3000 New Federal Office Bldg., 500 Quarrier St. Area Code 304, 343-6181 Ext. 375 and 376.

CHEYENNE, WYO., 82001, 6022 Federal Bldg., 2120 Capitol Ave. Area Code 307, 778-2220.

CHICAGO, ILL., 60604, 1486 New Federal Bldg., 219 S. Dearborn St. Area Code 312, 353-4400.

CINCINNATI, OHIO, 45202, 8028 Federal Office Bldg., 550 Main St. Area Code 513, 684-2944.

CLEVELAND, OHIO, 44114, Room 600, 666 Euclid Ave. Area Code 216, 522-4750.

DALLAS, TEX., 75202, Room 1200, 1114 Commerce St. Area Code 214, 749-3287.

DENVER, COLO., 80202, Room 161 New Customhouse, 19th and Stout Sts. Area Code 303, 297-3246.

DES MOINES, IOWA, 50309, 609 Federal Bldg., 210 Walnut St. Area Code 515, 284-4222.

DETROIT, MICH., 48226, 445 Federal Bldg. Area Code 313, 226-6088.

GREENSBORO, N.C., 27402, 258 Federal Bldg., W. Market St. P.O. Box 1950. Area Code 919, 275-9111.

HARTFORD, CONN., 06103, Room 610-B, Federal Office Bldg., 450 Main St. Area Code 203, 244-3530.

HONOLULU, HAWAII, 96813, 286 Alexander Young Bldg., 1015 Bishop St. Area Code 808, 546-5977.

HOUSTON, TEX., 77002, 5102 Federal Bldg., 515 Rusk Ave. Area Code 713, 226-4231.

JACKSONVILLE, FLA., 32202, P.O. Box 35087, 400 W. Bay St. Area Code 904, 791-2796.

KANSAS CITY, MO., 64106, Room 1840, 601 E. 12th St. Area Code 816, 374-3141.

LOS ANGELES, CALIF., 90024, 11th Floor, Federal Bldg., 11000 Wilshire Blvd. Area Code 213, 824-7591.

MEMPHIS, TENN., 38103, 710 First American Bank Bldg., 147 Jefferson Ave. Area Code 901, 534-3214.

MIAMI, FLA., 33130, Rm. 821, City National Bank Bldg., 25 W. Flagler St. Area Code 305, 350-5267.

MILWAUKEE, WIS., 53203, Straus Bldg., 238 W. Wisconsin Ave. Area Code 414, 272-8600.

MINNEAPOLIS, MINN., 55401, 306 Federal Bldg., 110 S. Fourth St. Area Code 612, 725-2133.

NEW ORLEANS, LA., 70130, 909 Federal Office Bldg., S., 610 South St. Area Code 504, 527-6546.

NEW YORK, N.Y., 10007, 41st Floor, Federal Office Bldg., 26 Federal Plaza, Foley Sq. Area Code 212, 264-0634.

PHILADELPHIA, PA., 19107, Jefferson Bldg., 1015 Chestnut St. Area Code 215, 597-2850.

PHOENIX, ARIZ., 85025, 5413 New Federal Bldg., 230 N. First Ave. Area Code 602, 261-3285.

PITTSBURGH, PA., 15222, 2201 Federal Bldg., 1000 Liberty Ave. Area Code 412, 644-2850.

PORTLAND, ORE., 97204, 217 Old U.S. Courthouse, 520 S.W. Morrison St. Area Code 503, 226-3361.

RENO, NEV., 89502, 2028 Federal Bldg., 300 Booth St. Area Code 702, 784-5203.

RICHMOND, VA., 23240, 2105 Federal Bldg., 400 N. 8th St. Area Code 703, 649-3611.

ST. LOUIS, MO., 63103, 2511 Federal Bldg., 1520 Market St. Area Code 314, 622-4243.

SALT LAKE CITY, UTAH, 84111, 1201 Federal Bldg., 125 S. State St. Area Code 801, 524-5116.

SAN FRANCISCO, CALIF., 94102, Federal Bldg., Box 36013, 450 Golden Gate Ave. Area Code 415, 556-5864.

SAN JUAN, P.R., 00902, Room 100, Post Office Bldg. Phone 723-4640.

SAVANNAH, GA., 31402, 235 U.S. Courthouse and Post Office Bldg., 125-29 Bull St. Area Code 912, 232-4321.

SEATTLE, WASH., 98104, 8021 Federal Office Bldg., 909 First Ave. Area Code 206, 442-5615.

UNITED STATES
GOVERNMENT PRINTING OFFICE
DIVISION OF PUBLIC DOCUMENTS
WASHINGTON, D.C. 20402

OFFICIAL BUSINESS

POSTAGE AND FEES PAID
U.S. GOVERNMENT PRINTING OFFICE

CR - MAY 46129
UNIVERSITY MICROFILMS
SERIALS SECTION
300 NORTH ZEEB RD 48106
ANN ARBOR MICH

You can
help reverse
the balance.
THE CURRENCIES OF THE WORLD'S
PRINCIPAL TRADING NATIONS
ARE FREELY CONVERTIBLE INTO
EXPORT PROFIT DOLLARS.
Ask your Commerce Field Office
BANQUE DE FRANCE
DIX
NOUVEAUX FRANCS